UN
EC
AN
SOCIAL COUNCIL

GENERAL

E/ESCAP/STC.8/1
13 December 1984

ORIGINAL: ENGLISH

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

Committee on Shipping, and Transport and Communications
(Shipping, Ports and Inland Waterways Wing)

Eighth session
8-14 January 1985
Bangkok

DEVELOPMENTS IN SHIPPING, PORTS AND INLAND WATERWAYS:

REVIEW OF DEVELOPMENTS IN SHIPPING, PORTS AND INLAND WATERWAYS

(Item 4 (a) of the provisional agenda)

Note by the secretariat

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Part One. Review of developments in shipping, 1983-1984

I. OVERVIEW: THE GENERAL SITUATION

A. World economy and trade

1. As with the world economy in general, the overall situation of world shipping in 1983-1984 was one of recession. The general slump was reflected in the declines in 1983 compared with 1982 in world output and trade and in the tonnages of world's sea-borne trade and merchant fleet. However, although the economic slack generally persisted, there were indications of a trend towards recovery discernible in 1983 in some sectors and countries especially the United States of America.

2. In 1981 and 1982, the growth rates of world gross domestic product (GDP) had been minimal, only 1.7 and 0.8 per cent, respectively (see table 1). In 1983, however, there was a significant, although still slight, improvement as world output expanded by 2.2 per cent.

3. The initial recovery in world economic health, however, was uneven. Some North American countries and South and South-East Asian developing countries were experiencing a comparatively faster growth in income and output while most developing countries were beset with problems which seriously hampered their prospects for economic rehabilitation. Recovery in Western Europe was still weak.

4. The outlook at the end of 1983 for the world economy was less than bright[1/] despite hopes that favourable trends in the United States would firm up and stimulate an upward trend in other countries. The projections of the Organisation for Economic Co-operation and Development (OECD) for its developed members indicate a stronger overall growth (in real gross national product) of 4.25 per cent in 1984 than in the previous year and as high as 6 per cent for the United States.[2/] However, the growth is expected to slowdown to 2.75 per cent for the OECD area and to 2.5 per cent for the United States in 1985. The United Nations Secretariat forecasts[3/] higher growth in world GDP of 4 and 3.5 per cent for 1984 and 1985, respectively.

/Table 1.

1/ Economic and Social Survey of Asia and the Pacific 1983 (United Nations publication, Sales No. E.84.II.F.1), p. 1.

2/ Organisation for Economic Co-operation and Development, Economic Outlook (Paris, July 1984), p. 18, table 1.

3/ World Economic Survey 1984 (United Nations publication, Sales No. E.84.II.C.1), p. 1, table I-1.

Table 1. Growth of world output and trade 1978-1985

(Percentages)

	1978	1979	1980	1981	1982	1983[a/]	1984[b/]	1985[b/]
				Gross domestic product				
World	4.5	3.4	2.0	1.7	0.8	2.2	3.8	3.5
Developing countries	4.1	5.0	3.2	1.6	0.5	0.0	3.5	3.5
Developed market economies	4.0	3.1	1.2	1.5	-0.2	2.0	3.8	3
Centrally planned economies[c/]	6.2	3.1	3.7	2.4	3.7	4.3	4	4
				International trade				
World imports	5.5	5.2	1.2	1.6	-0.7	0.5	4	5
World exports	4.9	6.1	1.5	0.2	-2.2	1.5	4	5

Source: United Nations, World Economic Survey, various years.

a/ Preliminary estimates.

b/ United Nations Secretariat forecasts.

c/ Net material product; China, Eastern Europe and Union of Soviet Socialist Republics only.

5. Developments in the world economy are reflected in world trade, the two seeming to follow a more or less similar pattern (see table 2). The growth in world exports and import volumes also declined sharply, from an average annual growth of 5.2 and 5.6 per cent respectively in 1976-1980, to -2.2 and -0.7 per cent, respectively, in 1982. The years 1981-1982 were the worst period of sustained decline in trade since the Second World War. In 1983, however, a slight recovery was evident as exports grew by 1.5 per cent and imports by 0.5 per cent. United Nations estimates for 1984 and 1985 indicate further improved performance.

6. Most developing countries have suffered from foreign exchange constraints and have had to adjust their imports drastically downwards. As the after-effects of the 1979 oil crisis were felt only later, the growth rate in import volumes of developing countries which had been 13.6 per cent in 1981 fell to -1.0 per cent in 1982 and to -7 per cent in 1983. In many countries debt-servicing payments took a considerable part of export earnings and thereby reduced the potential for imports. For 1984 and 1985, however, their imports are forecast to grow slightly by 2 and 4 per cent.

7. The export volumes of the developing countries decreased as the import volumes of the developed market economies also decreased, indicating the latter group's reduced capability to absorb the former group's products. The exports of developing countries are estimated to grow by 4.5 per cent in 1984 and 5 per cent in 1985.

B. World sea-borne trade 4/

8. World sea-borne trade dropped to an estimated 3,165 million tons in 1983. This reduction of 84 million tons or 2.5 per cent, however, was much less than the 7.3 per cent drop in the preceding year, showing some improvement. All major commodities showed a decline, led by crude oil - 23 million tons; oil products - 13 million tons; coal - 16 million tons; grain - 7 million tons; and all other cargo - 20 million tons. From the record high level in total trade of 3,755 million tons in 1979 there was decline each year to 1983, at an annual average of 147.5 million tons or nearly 1 per cent.

9. In terms of cargo transported over distance, world sea-borne trade fell by 519 billion ton-miles, or 3.8 per cent in 1983 to 13,180 billion ton-miles. This drop, however, was less than that between 1981 and 1982, 2,141 billion ton-miles or 13.5 per cent, indicating some improvement in the cargo flows.

/Table 2.

4/ See Review 1983 (Oslo, Fearnleys, 1984)

Table 2. World trade: annual rates of change in volume 1976-1985[a/]

	1976-1980	1981	1982	1983[b/]	1984[c/]	1985[c/]
			Volume of exports			
World	5.2	0.2	-2.2	1.5	4	5
Developed market economies	6.6	2.2	-2.2	1.5	4	5
Developing countries	2.0	-4.8	-4.8	-0.2	4.5	5
Capital-surplus countries	-2.4	-16.7	-20.5	-5	4	4
Other net energy exporters	3.4	-6.2	-2.5	-0.5	4	5
Net energy importers	8.0	11.0	8.1	3	5	6
Centrally planned economies d/	5.6	1.0	6.5	6.5	3	3
			Volume of imports			
World	5.6	1.6	-0.7	0.5	4	5
Developed market economies	5.5	-2.1	-0.9	3	5	5.5
Developing countries	6.1	13.6	-1.0	-7	2	4
Capital-surplus countries	11.8	23.5	11.9	-11	3	5
Other net energy exporters	6.5	23.4	-6.4	-19	2	4
Net energy importers	4.5	6.1	-3.1	0.5	2	4
Centrally planned economies d/	4.7	1.0	1.9	4	4	4

Source: World Economic Survey, 1984 (United Nations publication, Sales No. E.84.II.C.1), p. 34, table II-1.

a/ Rates of change in prices estimated from unit value indexes expressed in dollars.

b/ Preliminary estimates, rounded to the nearest half a percentage point.

c/ Forecasts.

d/ Eastern Europe and USSR only.

While crude oil movement slowed down by 212 billion ton-miles or 3.9 per cent to 5,200 billion ton-miles in 1983, this was much less than the decline of 1,959 billion ton-miles or 26.6 per cent the year before. Coal products decreased by 134 billion ton-miles, iron ore by 43 billion ton-miles, grain by 40 billion ton-miles and all other cargo by 40 billion ton-miles.

10. There has been a decline in total oil trade volume of 29 per cent since 1979 and in crude oil of 34 per cent. In terms of ton-miles total oil trade decreased by 41 per cent due to a decline in crude-oil ton-miles. These figures reflect not only lower world demand, resulting in lower prices for oil in the world market, but also a trend for the bigger oil-consuming economies to obtain their oil supplies closer to home, which further decreases the demand for tanker capacity.

C. World's merchant fleet[5/]

11. The economic recession resulted in a shrinkage of the world's merchant fleet in 1983 for the first time since the Second World War. It contracted by nearly 2.2 million gross registered tons (grt), or 0.5 per cent, from an all-time record of 424.7 million grt in 1982 to 422.6 million grt in 1983. The number of ships, however, increased slightly by 129 from 23,267 to 23,496. The decline in total tonnage was due mainly to the substantial decrease in oil tanker by 9.6 million grt and the slight decrease in general cargo vessels by 1.2 million grt. These reductions more than offset increases in the tonnage of ore and bulk carriers - 5.1 million grt; container ships - 1.3 million grt and specialized carriers - 0.5 million grt. The tonnage of bulk/oil carriers remained constant.

12. In terms of age, the world's merchant fleet is young with 52 per cent of it being under 10 years old and 37 per cent between 10 and 19 years. The 11 per cent of the world fleet, or 46.5 million grt, 20 or more years old, is likely to be in need of early replacement. The distribution by flag of vessels 20 years of age and over is as follows:

Country or area	Percentage of total fleet tonnage
United States	38.2
China	27.9
USSR	17.7
Panama	17.7
Greece	17.5

/Italy

5/ See Lloyd's Register of Shipping (London), Annual reports, 1982 and 1983.

Country or area	Percentage of total fleet tonnage
Italy	17.0
Saudi Arabia	15.2
Netherlands	11.6
Singapore	10.3
India	9.0
Republic of Korea	7.1
Hong Kong	2.6
Japan	1.1

13. The figures of world tonnage of laid-up vessels increased sharply from December 1981 to December 1982, by 29.5 million gross tons (gt), (2 per cent, or 1,021 ships). In December 1983, however, the tonnage of vessels laid up was slightly reduced by 1.9 million grt or only 0.04 per cent to 42.4 million grt although in terms of number of ships, more ships were laid up, 1,663 in 1983 compared with 1,548 in 1982.[6/] Most of the idled tonnage continued to be tankers, 67 per cent. Some idled tankers were being used as temporary storage. By number, most of the vessels laid-up continued to be general cargo ships.

14. The reduction in fleet tonnage could be partly due to the scrapping and losses of vessels, which according to Fearnley's Review, reached an all-time high in 1983, rising by 17 per cent from the previous record level of 29.2 million deadweight tons (dwt) in 1982 to 34.2 million dwt.

D. The shipping markets

15. The general developments in shipping demand and supply are reflected in the shipping markets for 1982 and 1983. Freight rates in the world non-liner markets (tankers and bulk carriers) have remained at a low level. Although there have been some very small rate increases in parts of the market, the general tendency is still unfavourable to shipowners/operators.

16. Since 1982, the bulk-carrier market has remained more or less at the low level to which it dropped in 1981. The reason for this is that, while the bulk-carrier fleet has continued to grow, there has been a steady drop in demand for bulk transport. Consequently, there was a sharp increase in lay-up and scrapping of bulk-carriers during 1983. These developments reflect a growing inefficiency in the use of ships in many trades, especially the longer time spent in some ports.

17. In the general cargo trades the pressure on the existing shipping lines has continued and even increased during recent years. This pressure, which

/reflects

6/ Lloyd's Register of Shipping, Annual report 1983 (London), p. 45.

reflects both additional liner tonnage and an influx of smaller bulk-carriers in liner trade, has often taken the form of strong outsider competition to the established liner conferences. More liner vessels have been laid-up. In many areas this development has gradually changed the sea-transport environment of shippers.

18. The continued depression in shipping markets has strengthened interest in scrapping. Figures reported by Fearnleys[7/] clearly show the increase in scrapping (tonnage broken up or lost, in million dwt):

	Tankers and combined carriers	Bulk-carriers	Other dry cargo	Total
1981	12.0	0.7	2.5	15.2
1982	25.3	1.5	3.1	29.9
1983	27.5	3.2	3.5	34.2

While the sale of tankers for scrapping doubled in 1982 and was at an even higher level in 1983, interest in scrapping of bulk-carriers has also grown considerably during the same period. The big tankers dominated the scrapping market as 59 VLCCs were sold for scrapping in 1982 and 64 in 1983. Among those sold for scrapping in 1983 was the biggest ship in the world, a tanker of 550,000 dwt. Most of the ships sold for scrapping went to shipbreakers in Asia.

19. In 1982 prices in the second-hand market for ships reflected the low level of the freight market. Prices of many types of bulk carriers and tankers were halved during that year. Calculations based on prices given by Fearnleys[8/] show that for smaller ships the decrease was somewhat less, but still about 25-30 per cent. Second-hand prices in 1983 reflected more optimism in the market and values increased 20-40 per cent in expectation of a possible future upturn in freight rates. By the end of 1983 prices for all types of ships were, however, still considerably below those prevailing two years earlier. Information on ship sales in the first part of 1984[9/] seems to indicate that at least for bulk carriers and tankers, the upward price development realized in 1983 has not continued to gain momentum in 1984.

20. Prospects for a possible increase in demand for ships appear dim. Overtonnage will likely continue even though more shipping tonnage is laid-up or is being used in a less than efficient way. Although scrapping helps create a more balanced level between supply and demand, the present scrapping rate

/will

7/ Review 1983, op. cit, table 5.

8/ Ibid., tables 18 and 19.

9/ Drewry Shipping Consultants Ltd., Shipping Statistics and Economics (London), June 1983, p. 48 and June 1984, p. 48.

will imply for some types of ships quite a long period before equilibrium between supply and demand is reached. How long a period will also depend on the future ordering activity for new tonnage and levelopments in sea-borne trade.

E. World shipbuilding and ship-repair

21. Developments in shipbuilding and ship-repair in general and in the ESCAP region are described in another secretariat document (E/ESCAP/STC.8/11).

II. THE SITUATION IN THE ASIAN AND PACIFIC REGION

A. The economic and trade situation

22. In 1983 the developing countries in the Asian and Pacific region continued to grapple with the ill effects of the severe, world economic recession which persisted from 1982. They were able to withstand the adverse effects of the recession in the past year better than the developing countries in most other regions.[10/] However, the performance of each country varied. Hardest hit were the least developed countries and island developing countries. Even the newly industrialized and the developed countries were affected by the downturn in economic activities.

23. While compared with those in other regions developing ESCAP countries as a whole had fared better. Still, many of them faced increasing economic and social problems. Unsteady national balance of payments limited their capacity to import capital goods and supplies essential for economic development, including those for shipping, shipbuilding, dredging, ports and inland waterways. Their external debt burdens were being aggravated by high interest rates, volatile exchange rates, low world market prices for many of their major export commodities, deteriorating terms of trade, slow down in international trade flows, and constricted access to markets. Unemployment and underemployment, population increase, domestic price spirals and budgetary deficits tended to aggravate the socio-economic conditions.

24. Despite these handicaps, however, and while world trade volumes in general stagnated during the past three years, the export trade of the developing ESCAP countries continued to grow yearly from 1977 (see table 3). While world exports and those of other developing market economics declined in

/Table 3.

10/ Official Records of the Economic and Social Council, 1984, Supplement No. 14, Annual report of the Economic and Social Commission for Asia and the Pacific (E/1984/24), para. 300.

Table 3. Growth of foreign trade volumes of selected regions, 1977-1983

(In quantum index numbers, 1980 = 100)

Region \ Year	1977	1978	1979	1980	1981	1982	1983
Exports							
World[a/]	90	94	100	100	100	97	...
Developed market economies [b/]	85	90	96	100	102	101	102[c/]
Developing market economies	102	103	109	100	94	88	...
Other Asia[a/]	77	86	94	100	108	111	...
Imports							
World[a/]	87	91	99	100	99	99	...
Developed market economies [b/]	88	91	100	100	97	97	99[c/]
Developing market economies	85	91	92	100	108	109	...
Other Asia[d/]	67	83	96	100	105	103	...

Source: United Nations, Monthly Bulletin of Statistics, vol. XXXVIII, No. 4, April 1984.

Notes: ... Not available.

a/ Excluding the trade of centrally planned economies.

b/ This classification is intended for statistical convenience and does not, necessarily, express a judgement about the stage reached by a particular country in the development process.

c/ Figures estimated by ESCAP secretariat, based on advance information from six countries.

d/ The statistical concept "Developing market economies/Other Asia" covers a large part of the developing Asian and Pacific region but does not include at least two major trading countries: China and the Islamic Republic of Iran.

1982 from 1981, exports of "Other Asia" developing market economies[11/] increased. On the import side, the trade volume of developing ESCAP countries declined slightly in 1982 after an annual increase from 1977 to 1981, indicating the effects of foreign exchange constraints. Complete data for 1983 and 1984 are not yet available, but preliminary estimates show advances in the import and export levels of the developed market economics which could have perked up the trades of developing countries.

25. During 1982 the sea-borne trade volume of the developing ESCAP countries amounted to around 750 million tons. They accounted for 23 per cent of the total world sea-borne trade of about 3,250 million tons. Since 1979, while world sea-borne trade has declined, that of the developing ESCAP countries has increased.

B. Shipping in the Asian and Pacific region

26. The gloomy development in world shipping was also reflected in shipping in the Asian and Pacific region. In addition to the over-supply in tankers and bulk-carriers, the prevailing tendency in the liner trades of ESCAP countries was overtonnaging. On the trans-Pacific routes, for example, it was estimated that overcapacity at least for some periods could have reached 20-40 per cent.[12/]

27. Less cargo volumes available, keen competition, freight wars, increased operating costs and decreased revenues resulted in losses to most of the shipping companies in both developed and developing ESCAP countries. Only very few could show favourable operating results. This general situation in Asia and the Pacific also characterized shipping in other regions of the world. Those companies in the developing countries which had a weak capital base and heavy foreign and domestic loan obligations faced serious problems in riding out the recession. Some of their ships were foreclosed by or returned to their creditors for failure to meet amortization payments and loan instalments incurred to acquire the ships. A number of shipping companies ceased operations or sought cargoes in other areas.

/28.

11/ While the statistical concept "developing market economies/other Asia" used in United Nations statistical publications covers a large part of the developing Asian and Pacific region it excludes a few trading countries like China and the Islamic Republic of Iran.

12/ "Too many ships, too little cargo", Far Eastern Economic Review (Hong Kong), 10 February 1983, p. 42.

28. There are also indications of losses and difficulties among shipping companies in a number of countries such as Malaysia, the Philippines, Singapore and Thailand. In Indonesia the inter-island and coastal services have also been affected by overcapacity. In India many major companies expect losses in the current fiscal year and in Pakistan the international shipping line has needed direct financial assistance from the Government.

29. The shipping companies were hard pressed to reduce expenses. Measures were adopted to rationalize shipping operations, including mergers of shipping companies as in the Republic of Korea where a drastic restructuring was undertaken under government auspices. Some countries found it advisable to enter into bilateral shipping agreements with the view to assuring more cargoes for their shipping companies. More tonnage was laid-up, especially big tankers. Co-operative arrangements were effected like slot chartering and joint operations. A few container consortia were reorganized. An urgent need was felt to save on fuel consumption by reducing the speed of vessels, converting ships to become more fuel-efficient, designing new vessels or acquiring vessels newly-designed which were more economical to operate.

30. Liner freight charges remained at generally low levels but there was a noticeable upward trend starting in 1983. However, rebating and under-the-counter discounts still prevailed in many trades although some liner conferences have tightened up monitoring and penalizing such practices by member lines concerned. Developments in the level and structure of liner freight charges are described in detail in another secretariat document (E/ESCAP/STC.8/2).

31. The weakened financial operations and conditions of shipping enterprises in the region influenced many of them to dispose of some vessels or to defer placing new orders for ships. Some also held back on repairs and maintenance of vessels unless quite necessary. Some companies, however, anticipating an upturn in shipping, placed orders for newbuildings, including two major Japanese companies whose substantial orders enlivened the market in 1983. Other companies took advantage of the rock-bottom prices and had their ships converted or go into dry-dock.

C. Developments in merchant fleets in the Asia and Pacific region

32. By mid-1983 the world merchant fleet had shrunk by 2.2 million grt or 0.5 per cent compared with mid-1982. Merchant fleets in the Asian and Pacific region, however, expanded by 4.1 per cent in the same period. About one-fifth of the world fleet sailed under the flags of ESCAP member countries. Their share

/of total

of total world tonnage of 422.6 million grt increased from 20.2 in 1982 to 20.5 per cent in mid-1983. It may be noted that the developing ESCAP countries for the first time topped the three developed countries in the region in their share of world fleet gross tonnage in 1983 (see table 4).

33. The fleets of developing ESCAP countries and areas increased by 3 per cent to 43.5 million grt in 1983 (July) from 1982 (see table 5). Their share of the world fleet rose to 10.3 per cent in 1983 (July) from 9.9 per cent in 1982. The biggest merchant fleets of the developing ESCAP countries were, in rank, those of China, 8.7 million grt; Singapore, 7.0 million grt; the Republic of Korea, 6.4 million grt; India, 6.2 million grt; Hong Kong, 4.4 million grt; Philippines, 3.0 million grt; Indonesia, 2.0 million grt; Islamic Republic of Iran, 1.8 million grt; Malaysia, 1.5 million grt; and Thailand, 0.6 million grt (see table 6).

34. Around 40 per cent of the 8,728 ships of developing ESCAP countries are small, in the 100-499 gt group in 1983 (see table 7). Eleven per cent are in the next group, 500-999 gt. They had only one ship in the 140,000 grt and over group and nine in the next group of 120,000-139,999 grt. Nearly 44 per cent of the 20,016 ships of all ESCAP countries in 1983 sailed under a flag of a developing country or area.

35. The merchant fleets in the region with the highest proportion of new equipment is that of Hong Kong, followed by Singapore with 38.5 per cent and 22.8 per cent respectively of their vessels no older than four years (see table 8). While overall their merchant fleets are newer than in previous years, those of China and the Philippines still have 13.8 per cent and 9.2 per cent of their tonnages 25 years old and over.

36. The fastest growth rates in gross tonnage over the period 1971-1983 among the merchant fleets of developing countries or areas in the region were achieved by Sri Lanka - 3,687 per cent, followed by Malaysia - 1,626 per cent, the Islamic Republic of Iran - 1,263 per cent, and Singapore - 1,105 per cent. In the last years 1978 to 1983, the Hong Kong fleet showed the fastest growth rate - 401 per cent, followed by Sri Lanka - 311 per cent and Malaysia - 167 per cent (see table 6).

37. Of the Pacific island countries, Nauru had the biggest fleet tonnage in mid-1983 - 69,904 grt, followed by Fiji - 23,960 grt, and Papua New Guinea - 23,911 grt. The Solomon Islands, however, attained the fastest growth from 1971 to 1983 at 677 per cent, with Tonga second at 524 per cent.

/Table 4.

Table 4. Growth of merchant fleets of ESCAP countries, 1974-1983

(As percentage of world total)

Year	Number of vessels			Gross registered tonnage			Deadweight capacity		
	Total	Developed[a/]	Developing	Total	Developed[a/]	Developing	Total	Developed[a/]	Developing
1974	24.0	17.1	6.9	17.8	12.9	4.9	17.3	12.9	4.4
1975	24.5	16.7	7.8	17.2	12.0	5.2	16.8	12.0	4.8
1976	24.0	15.6	8.4	17.5	11.5	6.0	17.2	11.6	5.6
1977	24.1	15.0	9.1	17.3	10.6	6.7	16.8	10.5	6.3
1978	24.1	14.3	9.8	17.4	10.1	7.3	16.8	10.0	6.8
1979	25.2	14.8	10.4	18.4	10.2	8.2	17.8	10.1	7.7
1980	25.8	15.1	10.7	18.7	10.2	8.5	18.1	10.1	8.0
1981	26.3	15.0	11.3	19.4	10.2	9.2	18.7	10.1	8.6
1982	26.8	15.1	11.7	20.2	10.3	9.9	19.6	10.2	9.4
1983[b/]	24.8	14.8	10.2	20.5	10.2	10.3	20.0	10.1	10.0

Source: Lloyd's Register of Shipping (London), statistical tables.

Notes: a/ Australia, Japan and New Zealand.

b/ Mid-year.

	Year	Oil five classes			Total (including other types)		
		Number of vessels	Gross registered tonnage		Number of vessels	Gross registered tonnage	
			Tonnage	Percentage of world fleet		Tonnage	Percentage of world fleet
Japan	1979	1 55	49 102	-	9 981	39 992 825	9.68
	1980	1 59	27 458	-	10 568	40 959 683	9.75
	1981	1 55	30 262	-	10 422	40 835 681	9.72
	1982	1 58	25 870	-	10 652	41 593 612	9.79
	1983	1 50	17 792	-	10 593	40 751 915	9.64
Australia and New Zealand	1979	2	07 535	-	574	1 910 223	0.46
	1980	2	95 247	-	619	1 906 137	0.45
	1981	2	05 754	-	641	2 011 448	0.48
	1982	2	10 023	-	674	2 125 524	0.50
	1983	2	24 423	-	695	2 273 675	0.54
Developing ESCAP countries b/	1979	65	46 523	-	6 847	31 895 151	7.72
	1980	70	82 824	-	7 360	33 729 976	8.03
	1981	74	17 878	-	7 866	36 707 483	8.74
	1982	82	99 309	-	8 805	42 108 868	9.91
	1983	86	30 667	-	9 252	43 491 957	10.29
World	1979	7 07	96 461	-	71 129	413 021 426	-
	1980	7 23	05 937	-	73 832	419 910 651	-
	1981	7 12	46 238	-	73 864	420 188 113	-
	1982	7 14	25 343	-	75 151	424 741 682	-
	1983	7 01	12 954	-	76 106	422 590 317	-

Source: Lloyd's Register o

a/ Mid-year.

b/ The record of vessels r

Table 5. Fleets in the Asian and Pacific region, 1979-1983[a/]

	Year	Oil and miscellaneous tankers			Bulk/oil carriers			Ore and bulk carriers			Fully cellular			Other general cargo			Total of five classes			Total (including other types)		
		Number of vessels	Gross registered tonnage		Number of vessels	Gross registered tonnage		Number of vessels	Gross registered tonnage		Number of vessels	Gross registered tonnage		Number of vessels	Gross registered tonnage		Number of vessels	Gross registered tonnage		Number of vessels	Gross registered tonnage	
			Tonnage	Percentage of world fleet		Tonnage	Percentage of world fleet		Tonnage	Percentage of world fleet		Tonnage	Percentage of world fleet		Tonnage	Percentage of world fleet		Tonnage	Percentage of world fleet		Tonnage	Percentage of world fleet
Japan	1979	1 553	17 246 069	9.82	42	3 316 739	12.52	370	9 489 364	11.60	59	1 391 632	13.92	2 683	4 405 298	5.49	4 707	35 849 102	-	9 981	39 992 825	9.68
	1980	1 591	17 702 926	10.10	43	3 458 692	13.18	377	9 537 632	11.44	67	1 571 327	13.94	2 738	4 256 881	5.24	4 816	36 527 458	-	10 568	40 959 683	9.75
	1981	1 550	17 539 080	10.20	38	3 141 989	12.16	355	9 902 030	11.35	68	1 601 577	13.03	2 628	3 945 586	4.96	4 639	36 130 262	-	10 422	40 835 681	9.72
	1982	1 583	17 333 195	10.37	33	2 797 861	10.75	370	10 916 364	11.70	71	1 703 704	13.16	2 707	3 774 746	4.75	4 764	36 525 870	-	10 652	41 593 612	9.79
	1983	1 506	16 347 291	10.37	24	2 042 882	7.85	359	11 490 870	11.68	68	1 746 491	12.30	2 714	3 690 258	4.71	4 671	35 317 792	-	10 593	40 751 915	9.64
Australia and New Zealand	1979	20	368 406	0.21	-	-	-	29	838 246	1.02	4	134 784	1.35	76	366 099	0.46	129	1 707 535	-	574	1 910 223	0.46
	1980	21	417 931	0.24	-	-	-	26	784 015	0.94	4	134 784	1.20	76	358 517	0.44	127	1 695 247	-	619	1 906 137	0.45
	1981	25	455 629	0.26	1	26 519	0.10	27	861 415	0.99	4	134 784	1.10	67	327 407	0.41	124	1 805 754	-	641	2 011 448	0.48
	1982	25	455 195	0.27	-	-	-	30	980 389	1.05	4	134 784	1.04	68	339 655	0.43	127	1 910 023	-	674	2 125 524	0.50
	1983	25	536 416	0.34	-	-	-	29	1 010 044	1.03	4	134 784	0.95	76	343 179	0.44	134	2 024 423	-	695	2 273 675	0.54
Developing ESCAP countries b/	1979	659	7 791 844	4.47	33	1 824 550	6.89	403	7 419 872	9.07	68	601 800	6.02	2 936	11 708 457	14.60	4 099	29 346 523	-	6 847	31 895 151	7.72
	1980	708	7 879 533	4.50	35	1 814 794	6.92	430	8 034 019	9.64	84	1 059 033	9.39	3 032	12 295 445	15.12	4 289	31 082 824	-	7 360	33 729 976	8.03
	1981	748	8 121 847	4.72	36	1 809 470	7.00	500	9 902 619	11.35	97	1 232 375	10.03	3 195	12 851 567	16.15	4 576	33 917 878	-	7 866	36 707 483	8.74
	1982	822	8 534 473	5.11	38	1 936 757	7.44	577	11 890 246	12.75	93	1 359 656	10.51	3 183	13 278 177	16.71	4 713	36 999 309	-	8 805	42 108 868	9.91
	1983	867	8 773 491	5.57	45	2 350 774	9.03	663	14 301 246	14.54	112	1 584 763	11.17	3 363	13 320 393	17.00	5 050	40 330 667	-	9 252	43 491 957	10.29
World	1979	7 070	174 459 872	-	430	26 [illegible]6 001	-	4 208	81 872 260	-	594	9 995 812	-	22 407	80 217 516	-	34 709	372 996 461	-	71 129	413 021 426	-
	1980	7 232	175 241 193	-	424	26 241 499	-	4 282	83 354 613	-	662	11 274 078	-	22 676	81 294 554	-	35 276	377 405 937	-	73 832	419 910 651	-
	1981	7 123	171 997 939	-	416	25 837 847	-	4 320	87 245 946	-	707	12 291 929	-	22 178	79 572 577	-	34 744	376 946 238	-	73 864	420 188 113	-
	1982	7 149	167 108 085	-	418	26 030 013	-	4 529	93 268 040	-	718	12 941 690	-	22 242	79 477 515	-	35 056	378 825 343	-	75 151	424 741 682	-
	1983	7 019	157 583 373	-	418	26 031 554	-	4 655	98 365 123	-	786	14 193 666	-	22 077	78 339 238	-	34 955	374 512 954	-	76 106	422 590 317	-

Source: Lloyd's Register of Shipping (London), statistical tables various issues.

a/ Mid-year.

b/ The record of vessels registered in China is not complete.

Table 6. Growth of merchant fleets[a/] of ESCAP countries and areas by tonnage, 1971, 1978 and 1983

(Gross tonnage, as at 30 June)

Country or area	1971	1978	1983	Percentage change	
				1983/1971	1983/1978
Developing:	8 257 797	28 116 071	43 491 957	427	55
Asia:	8 193 670	28 004 728	43 327 182	429	55
Bangladesh	...	248 496	380 476	...	53
Brunei	...	899	616	...	-31
Burma	54 617	70 848	107 114	96	52
China	1 022 256	5 168 898	8 674 599	748	68
Democratic Kampuchea	4 230	3 558	3 558	-16	0
Hong Kong	572 243	874 850	4 383 526	666	401
India	2 478 031	5 759 224	6 226 646	151	8
Indonesia	618 805	1 272 387	1 949 699	215	53
Iran, Islamic Republic of	131 667	1 194 675	1 794 642	1 263	50
Malaysia	85 473	552 456	1 475 048	1 626	167
Maldives	48 707	96 218	182 391	275	90
Pakistan	581 753	442 401	555 171	-5	25
Philippines	945 508	1 264 995	2 964 472	213	134
Republic of Korea	940 009	2 975 389	6 386 002	579	115
Singapore	581 777	7 489 205	7 009 106	1 105	-6
Sri Lanka	10 039	92 528	380 229	3 687	311
Thailand	86 222	335 116	566 654	557	69
Viet Nam	32 333	162 585	286 733	687	76
Pacific:	64 127	111 343	164 775	157	48
Fiji	6 380	10 023	23 960	275	139
Kiribati	2 193	1 333	2 272	4	70
Nauru	23 761	54 004	69 904	194	29
Papua New Guinea	24 779	16 718	23 911	-4	43
Solomon Islands	629	2 018	4 886	677	142
Tonga	2 502	20 663	15 618	524	-24
Others	3 883	6 584	24 224	524	268
Developed:	31 795 562	40 924 930	43 025 590	35	5
Australia	1 105 236	1 531 739	2 022 481	83	32
Japan	30 509 280	39 182 079	40 751 915	33	4
New Zealand	181 046	211 112	251 194	39	19
ESCAP total	40 053 359	69 041 001	86 517 547	116	25
World total	247 202 634	406 001 979	422 590 317	71	4

Source: Lloyd's Register of Shipping (London), statistical tables, 1971, 1978 and 1983.

a/ Merchant ships of 100 gt and above, excluding wood and non-propelled craft.

Country or area	100,000-119,999		120,000-139,999		140,000 and over		Total		
	A	B	A	B	A	B	A	B	A + B
Developing:	...	...	...	...	...	...	...	...	8 728
Asia:	...	...	...	...	...	...	...	...	8 529
Bangladesh	...	...	...	...	...	...	...	...	237
Brunei	...	...	...	...	...	...	...	...	1
Burma	...	...	...	...	...	...	...	...	102
China	1	-	-	-	-	-	1 071	108	1 179
Democratic Kampuchea	...	...	...	...	...	...	...	...	3
Hong Kong	1	-	-	1	-	1	291	3	294
India	1	-	2	-	-	-	628	49	677
Indonesia	7	-	-	-	-	-	1 365	26	1 391
Iran, Islamic Republic of	1	-	4	-	2	-	-	248	22	270
Malaysia	1	-	-	-	-	-	-	371	5	376
Maldives	...	...	...	...	...	...	...	...	...	39
Pakistan	...	...	...	...	...	...	...	...	...	87
Philippines	3	-	1	-	1	-	-	879	5	884
Republic of Korea	1 0	-	1	-	3	-	-	1 721	12	1 733
Singapore	2	-	1	-	-	-	-	852	3	855
Sri Lanka	...	...	...	...	...	...	...	...	...	68
Thailand	...	...	...	...	...	...	...	...	...	219
Viet Nam	...	...	...	...	...	...	...	...		114
Pacific:	...	...	...	...	...	...	...	...	...	199
Fiji	...	...	...	...	...	...	...	...	...	56
Kiribati	...	...	...	...	...	...	...	...	...	4
Nauru	...	...	...	...	...	...	...	...	...	9
Papua New Guinea	...	...	...	...	...	...	...	...	...	80
Solomon Islands	...	...	...	...	...	...	...	...	...	23
Tonga	...	...	...	...	...	...	...	...	...	19
Others	...	...	...	...	...	...	...	...	...	8
Developed:	...	...	...	...	...	...	...	...	...	11 288
Australia	40	-	-	-	-	-	-	551	27	578
Japan	7 42	9	35	4	34	1	6	10 499	94	10 593
New Zealand	...	...	...	...	...	...	...	...	...	117
ESCAP total	...	...	...	...	...	...	...	...	...	20 016
World total	37 54	21	206	38	202	10	134	72 837	3 269	76 106

Source: Lloyd's Register of Ship

Note: A = motorships

Table 7. Merchant fleets of

(Number of s

Country or area	100-499		500-999		1,000-1,599		1,600-1,999		2,000-3,999		4,000-5,999		6,000-7,999		8,0 9,9
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A
Developing:	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asia:	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bangladesh	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Brunei	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Burma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
China	130	21	75	10	38	4	50	7	123	34	100	8	64	20	217
Democratic Kampuchea	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hong Kong	103	-	26	-	6	-	1	-	5	-	2	-	7	-	12
India	188	24	41	8	18	5	13	-	43	5	11	3	9	-	82
Indonesia	729	13	274	5	105	2	22	3	122	2	33	1	21	-	35
Iran, Islamic Republic of	138	12	30	1	7	-	1	-	6	-	7	-	1	-	10
Malaysia	156	-	86	-	24	-	15	-	46	-	10	-	1	-	2
Maldives	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pakistan	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Philippines	380	-	188	1	50	1	28	-	90	1	20	-	12	-	28
Republic of Korea	1 028	-	171	-	67	-	46	2	146	2	43	-	9	-	41
Singapore	245	1	76	-	59	-	33	-	64	-	58	-	41	-	78
Sri Lanka	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thailand	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Viet Nam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pacific:	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fiji	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kiribati	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nauru	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Papua New Guinea	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Solomon Islands	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tonga	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Developed:	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Australia	409	13	41	4	17	3	1	-	14	-	7	-	7	-	3
Japan	7 422	3	1 113	-	248	-	134	-	535	1	162	2	116	-	82
New Zealand	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ESCAP total	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
World total	37 548	712	7 450	258	4 342	63	1 298	34	5 943	178	2 682	55	1 664	209	2 720

Source: Lloyd's Register of Shipping, statistical tables, 1983.

Note: A = motorships B = steamships

SCAP countries and areas by tonnage groups, 1983

s in divisions of gross tonnage)

	10,000-14,999		15,000-19,999		20,000-29,999		30,000-39,999		40,000-59,999		60,000-79,999		80,000-99,999		100,000-119,999		120,000-139,999		140,000 and over		Total		
B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A + B
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6 728
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8 529
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	237
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	102
2	141	2	65	-	38	-	19	-	11	-	-	-	-	-	-	-	-	-	-	-	1 071	108	1 179
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
-	16	-	32	-	34	1	27	-	7	-	13	-	-	-	-	-	-	1	-	1	291	3	294
-	114	4	31	-	34	-	10	-	21	-	11	-	-	-	-	-	2	-	-	-	628	49	677
-	11	-	7	-	5	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1 365	26	1 391
-	28	-	9	-	9	1	-	-	2	2	-	-	-	-	-	4	-	2	-	-	248	22	270
-	10	-	7	-	4	-	5	-	4	-	-	5	1	-	-	-	-	-	-	-	371	5	376
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.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	37
-	31	-	34	-	6	-	3	-	7	-	2	-	-	-	-	1	-	1	-	-	879	5	884
-	70	-	39	-	26	4	15	1	12	-	6	-	2	1	-	1	-	3	-	-	1 721	12	1 733
:	64	-	35	-	24	-	29	-	44	-	2	-	-	1	-	1	-	-	-	-	852	3	855
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	68
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	219
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		114
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	199
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	56
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.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	80
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11 288
	22	-	9	-	7	2	3	1	3	4	7	-	1	-	-	-	-	-	-	-	551	27	578
1	198	-	110	-	78	1	111	3	82	4	67	-	27	4	9	35	4	34	1	6	10 499	94	10 593
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	117
.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20 016
1	3 437	320	2 139	220	1 369	232	960	124	719	86	400	69	97	66	21	206	38	202	10	134	72 837	3 269	76 106

Table 8. Merchant fleets of selected ESCAP countries and areas by age group and by ship type as at 30 June 1983

(Percentage distribution of country or area tonnages)

Shiptype/country or area \ Age group	0-4 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years	30 years and over
Tankers							
China	19.6	15.3	6.6	36.9	8.2	7.1	6.3
Hong Kong	26.3	62.1	0.1	11.1	0.3	0.1	-
India	12.7	63.1	15.6	8.6	-	-	...
Japan	21.3	42.2	35.0	1.2	0.3	...	...
Philippines	1.0	51.3	19.2	17.5	4.1	2.5	4.3
Republic of Korea	5.9	45.6	32.0	11.7	3.1	1.6	-
Singapore	19.9	55.5	18.0	5.5	0.4	0.6	...
Bulk carriers							
China	15.4	18.6	20.9	32.6	10.9	1.2	0.4
Hong Kong	44.9	17.8	27.3	8.7	1.3	-	-
India	8.1	42.1	20.9	22.7	4.7	0.4	1.1
Japan	34.6	25.2	38.3	1.9	-	-	-
Philippines	17.8	21.4	28.9	28.1	3.7	-	-
Republic of Korea	18.3	21.8	36.8	20.9	2.2	-	-
Singapore	33.1	26.6	22.7	13.0	4.5	-	-
Other vessels							
China	10.6	22.7	15.2	13.8	17.3	12.4	8.0
Hong Kong	15.3	57.6	9.8	6.0	10.5	0.2	0.6
India	15.4	24.6	23.9	17.6	11.7	5.5	1.4
Japan	32.0	24.9	29.5	9.8	2.5	0.5	0.8
Philippines	12.6	10.9	23.6	15.9	17.8	9.5	9.7
Republic of Korea	18.4	19.1	27.2	17.2	10.1	6.1	1.9
Singapore	17.9	28.7	20.5	9.9	13.0	8.5	1.5
All types of vessel							
China	13.3	20.4	15.7	22.7	14.1	8.3	5.5
Hong Kong	38.5	28.7	21.6	8.6	2.5	...	0.1
India	11.5	40.6	20.8	18.1	6.0	2.0	1.0
Japan	28.6	31.9	34.6	3.7	0.8	0.1	0.2
Philippines	12.5	22.8	24.9	21.1	9.5	4.4	4.8
Republic of Korea	16.4	24.6	33.3	18.4	4.6	2.0	0.6
Singapore	22.8	37.4	20.3	9.2	6.3	3.4	0.6

Source: Lloyd's Register of Shipping (London), statistical tables, 1983.

38. Behind the growth rates lays a tonnage increase of nearly 10 million gt over the period 1981-1983. A few fleets account for much of this increase: Hong Kong, 1.8 million grt; Republic of Korea, 1.2 million grt; China, 1.0 million grt; and Malaysia and the Islamic Republic of Iran, 0.6 million grt each.

39. The growth in the fleet of China reflects the development of the China Ocean Shipping Company, which now has about 4.5 million grt, or more than half of the total Chinese fleet. According to press reports, plans exist for doubling China's merchant fleet before 1990.[13/] In the Republic of Korea, the fleet expansion programme laid down in the eighth shipbuilding programme provides for a tonnage growth of over 3 million grt to about 9.6 million grt by 1986.[14/]

40. In Bangladesh the national line plans to increase its fleet by six ships followed by another two in 1984/85 and seven before 1990, partly for replacement of old tonnage,[15/] while in the Islamic Republic of Iran there are plans for adding another 1.5 million dwt to the fleet of the national line.[16/] In India the state-owned shipping corporation will build six containerships as a part of its containerization programme.

41. Japan's merchant fleet, still the biggest by far in the Asian and Pacific region, decreased for the first time in 1983, but the reduction of 2 per cent was smaller than that experienced by many other shipping nations.[17/] Its total tonnage of 41.6 million grt in 1982 decreased to 40.8 million grt at mid-1983. The reduction will be offset by substantial new orders for ships once these are all delivered in a few years. The government and private maritime sectors have prepared for an in-depth study and long-term planning for the introduction of sophisticated technology fleet operations and to strengthen the fleet's competitiveness.

42. The strongest growth has been in the bulk carrier and container ship fleets. There has been less growth in the tanker and general cargo ship fleets. Developing ESCAP countries now account for 13 per cent of the world's bulk carrier and combined carrier fleet and 11 per cent of the container fleet.

/D.

13/ "China Shipping", Far Eastern Economic Review, 16 February 1984, p. 35.

14/ Lloyd's List, 9 April 1984.

15/ Ibid., 12 March 1984.

16/ Ibid., 8 August 1984.

17/ Ibid., 18 August 1984.

D. Share in the carriage of foreign trade

43. As there are very few reliable data available in many developing ESCAP countries it is difficult to create, in some cases, an overall picture of the national fleet's ability to carry the country's foreign trade. Some information which has been reported in the press about conditions in individual countries may give an indication.

44. In India 28 per cent of the sea-borne trade was carried by Indian ships, which is considerably lower than in some previous years. In late 1983 the share had again risen to more than 40 per cent.[18/] The national shipping line in the Islamic Republic of Iran carried about 13 million tons of import cargo in 1983 or some 76 per cent of total imports.[19/] Shipping lines in the Republic of Korea carried 21.5 per cent of the country's trade with North America during the first 11 months of 1982.[20/] The loading share of Japanese flag vessels (excluding chartered foreign vessels) in the country's foreign trade in 1983 was 20.8 per cent for export and 43.8 per cent for import. The corresponding figures for 1982 were 22.5 per cent and 40.4 per cent respectively.[21/]

E. Shipbreaking in the Asian and Pacific region

45. Developing countries in the Asian and Pacific region undertook nearly half of the world's shipbreaking in 1983.[22/] The percentage shares of major shipbreakers were:

Bangladesh, India and Pakistan	10-12
China (other than Taiwan province)	5
Taiwan province	50
Republic of Korea	25

46. In the Republic of Korea the biggest shipbreaking company demolished about 1 million light displacement tons (ldt)[23/] in 1982 and expected to reach 2 million ldt in 1983.

47. In China, other than Taiwan province, 300,000 to 500,000 ldt were broken up in 1984.[24/] In Taiwan province, the shipbreaking centre which was

/established

18/ "Indian survey", Maritime Asia (Singapore), February 1984, p. 24.

19/ Lloyd's List, 12 March 1984.

20/ "Liner trade", Seatrade (London), February 1983, p. 27.

21/ Lloyd's List, 16 August 1984 and Japan Maritime Development Association, The Current Situation of Japanese Shipping, (Tokyo, 1984), p. 8.

22/ Review 1983, op. cit., p. 13.

23/ ldt-measure of ship weight when empty.

24/ Lloyd's List, 8 August 1983.

established in 1982, ceased to function in 1983. Contrary to what was expected in the world market, this did not lead to a sharp increase in the price of ships for demolition. These prices remained relatively stable.[25/]

48. Bangladesh breakers started in summer of 1984 on demolishing the largest vessel they have handled so far (a tanker of 76,000 dwt or 15,000).[26/] In Pakistan shipbreakers demolished nearly 500,000 ldt in 1981.[27/] In Thailand a tanker of 165,000 dwt (27,500 ldt) has been broken up.[28/] Shipbreaking is expected to start in Sri Lanka in co-operation with interests in Singapore.[29/] In Japan ships amounting to 3.6 million grt are expected to be broken up before the end of the 1985 fiscal year.[30/]

F. Outlook

49. The outlook for shipping in the Asian and Pacific region in 1985 is one of uncertainty, similar to that for world shipping. While the output and trade of the region as a whole in 1982-1984 have shown signs of improvement over the performance in 1981-1983, the possible increase in available cargo volumes may not be sufficient to absorb the excess shipping capacity even in the next few years.

50. The fluctuation of the shipping industry were aggravated by the introduction in 1983 and 1984 of new significant elements. Among these are the taking effect on 6 October 1983 of the United Nations Convention on a Code of Conduct for Liner Conferences, the trend towards cargo reservation policies by some developing ESCAP countries, and the modification of United States merchant shipping policy with the enactment of the new Shipping Act which came into force on 18 June 1984. These elements, among others, are bound to strongly influence conference and non-conference liner shipping and the shipping and trade relationships among countries in the Asian and Pacific region and worldwide.

51. Other international conventions which have taken or will soon take effect will likewise influence developments in all types of shipping. Among these are the International Convention for the Safety of Life at Sea (1974 SOLAS Convention) and the protocol of 1978 relating to that convention the

/International

25/ Review 1983, op. cit., p. 13.

26/ Lloyd's List, 28 July 1984.

27/ Mohammed Aftab, "A demolition picnic", Far Eastern Economic Review, 13 January 1983, p. 49.

28/ Lloyd's List, 6 August 1983.

29/ Asian Shipping (Hong Kong), 8/1983.

30/ Lloyd's List, 10 March 1984.

International Convention on Standards of Training Certification and Watchkeeping for Seafarers, the International Convention on Maritime Search and Rescue, the Protocol of 1978 relating to the 1983 International Convention for the Prevention of Pollution from Ships including the first amendment which took effect on 1 September 1984.

52. The international shipping order is undergoing major changes.[31/] Among the pending issues are the transport of bulk cargoes, multimodal transport and flag-of-convenience vessels. It would be well for developing ESCAP countries to consider developments in the on-going evolution of a new international shipping order while they are in the process of reviewing and rationalizing their own national shipping situation.

/Part Two

31/ The Current Situation of Japanese Shipping, op. cit.

Part two. Review of developments in ports

I. PORTS

53. Port development in the Asian and Pacific region during 1983/84 continued to be plagued by problems of high interest rates, limitations in national and international funding resources as well as by the uncertainties associated with the downturn in world trades. Yet the 39 regional member and associate member countries of ESCAP, particularly the 22 island countries of the region, are heavily reliant on shipping services and ports for their international trade. To keep pace with the massive swing toward new technologies in the maritime sector, they have begun to plan and implement a large number of significant port development projects to accommodate the newly expanding economies and international trade of the region.

54. These factors have led to a greater emphasis being placed on the more effective use of existing facilities through improvements in their utilization in addition to undertaking "green site" developments. However, the developing member countries and areas have had to confront many problems at the beginning of the planning process itself because of the acute shortage of experience in the planning and design of large-scale port and marine related facilities. The problem lies not only at the technical detail level but also at the macro-conceptual level in such areas as reliable traffic forecasting, berth orientation, port layout and the integration of transport modes. Additionally, the implications of regional trade and the latest technological developments which impinge on the planning process are often not fully known or understood by port management.

55. A major problem faced by these countries and areas is the inability to forecast actual needs reliably. This problem is particularly acute because the export trade of many of them revolves around a small number of primary products and some semi-manufactured goods, while their imports consist of a wide range of manufactured goods which may be handled at ports in an entirely different way from export cargoes. Such a situation is highly vulnerable to sudden changes depending market conditions.

56. Notwithstanding these constraints, significant progress was made during 1982/83 in the rehabilitation and upgrading of existing facilities and in the planning of expansion projects in ports in the region.

/57.

57. Such ports as Busan, Hong Kong, Port Kelang and Tanjung Priok have shown increases in the number of vessels handled over the 1982/83 period, although growth rates are considerably lower than in previous years. This is principally due to increasing vessel size and the rationalization of shipping services. Even so expansion of activities is evidenced in the ports (see table 9). In nearly all countries, both developing and developed, significant increases in ship sizes have been recorded, a trend which will continue to have a significant impact on ports as deeper available water depths and larger storage areas become necessary.

58. With the increasing trend towards mechanization of the cargo-handling process in ports, there is a reducing demand for manual labour. This is witnessed in nearly all ports in the region (see table 10). However, Bombay Port Trust is an important exception and continues to hold its premier position as the largest employer among the ports in the region with a staff of 37,811 people. The next largest employers are the ports in Calcutta and Karachi. Some port complexes, such as the Philippine Ports Authority facilities, which report low levels of employment include only port management units and do not include stevedores or port workers in their reports. Others, like Penang Port Commission, do not employ stevedores directly. They are contracted by the shipping lines through the private sector. A major element influencing the reducing labour element in port operations is the move to containerization.

II. CONTAINERIZATION

59. For the first time since the introduction of containerization in the region, the pattern of growth in container traffic was mixed in 1982/83. While there is no doubt that container traffic volumes have improved during the period of this review, the growth rate of the activity is generally lower than in previous periods. In the case of Australia, New Zealand and some countries closely associated with their economies negative growth rates have been registered due to special circumstances. The present pattern appears to confirm the findings of an assessment of world container traffic, over the period 1976-1983, that there will be no more conventional-to-container traffic booms on the scale of the previous breakbulk to box conversion of the late 1970s.[32/] This indicates that the future growth of

/Table 9.

32/ "World container traffic", Lloyd's Shipping Economist (London), vol. 6, No. 5 (May 1984), p. 6.

Table 9. Ship calls at selected ports in the Asian and Pacific region

Country or area, and port		1979	1980	1981	1982	1983	Average growth rate 1979-1983
Australia:[a]							
Brisbane:	Number	...	907	946	1 029	...	
	Total dwt ('000 dwt)	...	16 740	18 607	20 229	...	
	Average size (dwt)		18 456	19 669	19 659	...	3.2[b]
Fremantle:	Number	...	1 141	1 026	1 016	...	
	Total dwt ('000 dwt)	...	27 118	23 404	24 460	...	
	Average size (dwt)		23 767	22 811	24 075	...	0.6[b]
Melbourne:	Number	...	1 536	1 820	1 762	...	
	Total dwt ('000 dwt)	...	28 916	35 158	34 046	...	
	Average size (dwt)		18 826	19 318	19 322	...	1.3[b]
Sydney:	Number	...	1 616	1 501	1 431	...	
	Total dwt ('000 dwt)	...	34 191	32 344	30 881	...	
	Average size (dwt)		21 158	21 548	21 580	...	1.0[b]
Burma:							
Rangoon:	Number	...	...	434	450	420	
	Total dwt ('000 dwt)	...	...	3 138	3 964	3 195	
	Average size (dwt)	...	...	7 230	8 809	7 607	2.6[c]
Hong Kong:							
Hong Kong:	Number	51 489	55 315	62 391	69 340	76 262	
India:[d]							
Bombay:	Number	1 720	1 851	1 930	1 964	1 717	
Calcutta:	Number	905	1 045	1 146	1 264	1 161	
Indonesia:							
Surabaya:	Number	1 142	1 261	1 426	1 501	1 525	

Table 9 (continued)

Country or area, and port		1979	1980	1981	1982	1983	Average growth rate 1979-1983
Japan:							
Kobe:	Number	11 026	11 147	11 340	11 112	10 601	
	Total gt ('000 gt)	111 135	119 531	119 585	117 463	117 021	
	Average size (gt)	10 079	10 723	10 545	10 571	11 039	2.3
Nagoya:	Number	7 309	7 507	7 469	5 398	...	
	Total dwt of ship ('000 dwt)	91 688	99 609	97 400	82 681	...	
	Average size (dwt)	12 544	13 269	13 041	15 317	...	6.9[e/]
Tokyo:	Number	4 090	3 874	3 857	4 065	4 161	
	Total dwt ('000 dwt)	39 371	40 789	42 747	45 315	47 099	
	Average size (dwt)	9 626	10 529	11 083	11 148	11 319	4.1
Yokohama:	Number	11 841	12 443	12 612	12 794	12 466	
	Total gt of ship ('000 gt)	168 108	179 825	179 013	175 898	175 024	
	Average size (gt)	14 197	14 452	14 194	13 748	14 040	-0.3
Malaysia:							
Port Kelang:	Number	3 151[f/]	3 168	3 368	3 579	3 663	
	Total grt ('000 grt)	28 880[g/]	28 530[g/]	28 580	31 030	32 900	
	Average size (grt)	9 165	9 006	8 486	8 670	8 982	2.9[c/]
New Zealand:[h/]							
Auckland:	Number	1 825	1 914	1 789	1 886	1 851	
Wellington:	Number	1 374	1 170	1 010	1 014	957	
	Total nrt ('000 nrt)	4 870	4 632	4 433	5 155	4 753	
	Average size (nrt)	3 544	3 959	4 389	5 084	4 967	8.8
Pakistan:[a/]							
Karachi:	Number	1 658	1 517	1 592	1 831	1 827	
	Total dwt ('000 dwt)	10 282	9 686	10 103	12 052	12 422	
	Average size (dwt)	6 201	6 385	6 346	6 582	6 799	2.3

Table 9 (continued)

Country or area, and port		1979	1980	1981	1982	1983	Average growth rate 1979-1983
Philippines:							
Cebu:	Number	428	380	448	433	407	
	Total dwt ('000 dwt)	3 086	2 873	3 345	3 384	3 384	
	Average size (dwt)	7 210	7 561	7 466	7 815	8 314	3.6
Davao:	Number	862	828	866	....	....	
	Total dwt ('000 dwt)	6 939	6 821	7 569	...	...	
	Average size (dwt)	8 041	8 238	8 740	...	...	4.2
Manila:	Number	3 417	2 999	2 870	2 795	...	
	Total dwt ('000 dwt)	19 473	23 742	26 543	...	...	
	Average size (dwt)	5 699	7 917	9 248	...	...	27.4 i/
Singapore:							
Singapore:	Number	25 892	27 077	28 414	30 575	30 287	
Thailand:							
Bangkok:	Number	1 764	1 698	1 717	1 737	1 827	
	Total nrt ('000 nrt)	6 047	5 912	5 834	5 467	5 856	
	Average size (nrt)	3 428	3 482	3 398	3 147	3 205	-1.7

Source: Compiled from data supplied by member countries and areas.

Notes: a/ Fiscal year: July-June.
b/ Average growth rate between 1980-1982.
c/ Average growth rate between 1981-1983.
d/ Fiscal year: April-March.
e/ Average growth rate between 1979-1982.
f/ Excluding dry bulk carriers.
g/ Excluding dry/liquid bulk carriers.
h/ Fiscal year: October-September.
i/ Average growth rate between 1979-1981.

Table 10. Total manpower and staff employed in selected ports of the Asian and Pacific region

Country and port		1979	1980	1981	1982	1983	Percentage change 1979-1983
Australia	Fremantle	1 490	1 450	1 447	1 358	1 271	-3.9
	Melbourne	4 417	4 267	4 204	4 101	3 819	-3.6
Burma	Rangoon	...	5 589	5 654	5 348	5 330	-1.6 a/
Fiji	Port Authority of Fiji	574	537	491	448	511	-2.9
India	Bombay	...	35 810	37 234	38 738	37 811	1.8 a/
	Calcutta	33 711	34 326	34 478	33 634	32 975	-0.5
Japan	Tokyo	5 306	5 138	4 915	4 704	4,568	-3.7 b/
	Kobe	9 333	8 989	9 000	8 789	...	-2.0 b/
Malaysia	Kelang	7 080	7 018	6 923	6 917	6 708	-1.3
	Penang	8 627	7 604	7 616	7 385	7 051	-4.9
New Zealand	Auckland	2 496	3 820	3 757	3 726	3 729	10.6
	Wellington	1 394	1 336	1 304	1 276	1 234	-3.0
Pakistan	Karachi	...	21 712	21 725	22 527	21 862	0.2 a/
Philippines	Manila c/	545	534	527	551	559	0.6
Singapore	Port of Singapore Authority	10 653	10 566	10 252	9 677	9 131	-3.8

Source: Information supplied by Governments.

Notes: a/ Percentage change between 1980 and 1983.

b/ Percentage change between 1979 and 1982.

c/ Philippines Ports Authority organic personnel.

containerization will be more closely related to the ports' natural traffic growth rate and the countries' foreign trade. Even so, the growth of containerized traffic is still likely to outstrip other cargo-handling systems while conventional operations will almost certainly reduce in scale.

60. This, notwithstanding the growth rates of container traffic in ports of the developing member countries of this region for 1982/83, remained satisfactory. For example, Klong Toey (the Port of Bangkok) increased its throughput to more than 300,000 twenty-feet equivalent units (TEUs) which represented a growth rate of 17.4 per cent over the period. Hong Kong and Singapore, two major pivotal container ports in the region, increased their throughput to more than 1.8 million and 1.2 million TEUs respectively, representing growth rates of 10.7 and 14.2 per cent over the period. In contrast, the explosive growth rate of 153.3 per cent at the International Port of Manila, achieved in 1979/80, was reduced to 8.9 per cent in 1982/83 while Bombay's traffic remained nearly constant at 130,000 TEUs (see table 11).

61. An inherent problem which is often associated with the introduction of containerization is the imbalance of containerized traffic flows. This can be considerably worsened in the case of developing countries where import cargoes consisting of manufactures, luxury goods and high value commodities are frequently well suited to containerization, while exports, which are often lower value, semi-processed or raw materials, are not always suitable for "box" shipment. As the countries and areas of the region adjust to the new container system, the situation is improving. Export commodities are being identified which can make economic use of outgoing containers while the process of industrialization is providing a valuable source of containerizable cargo. There are notable instances within the region where a balance between import and export containerized cargoes is not achieved (see table 12) including Cochin, India, where the export dominance (low ratio) results from a repositioning of empty containers generated by the Gulf countries, and Wellington, where the export market of dairy products, food stuffs and agricultural products is dominant. At the other extreme, Tanjung Priok, has a strong bias to containerized import cargoes (high ratio) some of which are generated by repositioning of containers by operators. On the whole, however, countries in the region are coming to terms with containerization and ensuring maximum economic benefit from an improving balance of cargo flows.

/Table 11.

Table 11. Containers handled by selected ports in the Asian and Pacific region, 1979-1983

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a] in TEUs and tons (percentage) 1979-1983	Rate of growth[a] in TEUs and tons (percentage) 1982/83
					Developed economies				
Australia:[b]									
Brisbane[c]	Export	Full	46 260	43 129	39 097	38 371	43 658		
		Empty	4 221	9 475	9 059	10 496	11 714		
		Total	50 481	52 604	48 156	48 867	55 372	2.3	13.3
		Tons	681 460	612 691	540 000	549 000	577 000	-4.1	5.1
	Import	Full	24 948	27 630	28 906	32 138	30 662		
		Empty	11 621	16 623	10 469	7 773	13 361		
		Total	36 569	44 253	39 375	39 911	44 023	4.7	10.3
		Tons	192 313	220 468	235 000	270 000	283 500	10.2	5.0
	Total TEUs of export and import		87 050	96 857	87 531	88 778	99 395	3.4	12.0
Fremantle[c]	Export	Full	28 156	28 599	31 736	38 259	38 000		
		Empty	3 150	5 839	11 214	9 829	9 000		
		Total	31 306	34 438	42 950	48 088	47 000	10.7	-2.3
		Tons	359 334	367 773	428 383	498 713	380 000	1.4	-23.8
	Import	Full	21 309	23 952	31 221	32 399	34 000		
		Empty	5 954	5 315	8 446	11 349	9 000		
		Total	27 263	29 267	39 667	43 748	43 000	12.1	-1.7
		Tons	215 587	248 094	307 447	318 684	340 000	12.1	6.7
	Total TEUs of export and import		58 569	63 705	82 617	91 836	90 000	11.3	-2.0

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a/] in TEUs and tons (percentage) 1979-1983	1982/83
Australia (continued)									
Melbourne	Export	Full	178 240	189 305	190 789	204 747	180 365		
		Empty	62 592	66 714	64 423	66 258	42 938		
		Total	240 832	190 141	191 884	271 005	223 303	-1.9	-17.6
		Tons[d/]	5 082 009	5 722 254	5 661 188	6 023 642	5 357 631	1.3	-11.1
	Import	Full	203 495	225 859	226 799	232 509	196 440		
		Empty	27 185	29 449	25 031	25 374	23 162		
		Total	230 680	255 308	251 830	257 883	219 602	-1.2	-14.8
		Tons[d/]	5 010 997	5 638 510	5 410 774	5 881 525	5 134 795	0.6	-12.7
	Total TEUS of export and import		471 512	445 449	443 714	528 888	442 905	-1.6	-16.3
Sydney[c/]	Export	Full	109 707	109 646	109 784	106 019	106 678		
		Empty	50 391	58 978	63 080	77 885	65 807		
		Total	160 098	168 624	172 864	183 904	172 485	1.9	-6.2
		Tons[d/]	2 292 309	2 275 614	2 295 346	2 234 773	2 300 492	0.1	2.9
	Import	Full	174 487	180 696	196 405	215 361	187 185		
		Empty	14 752	15 548	13 736	9 527	12 097		
		Total	189 239	196 244	210 141	224 888	199 282	1.3	-11.4
		Tons[d/]	3 765 084	3 863 426	4 229 271	4 626 248	4 078 346	2.0	-11.8
	Total TEUs of export and import		349 337	364 868	383 005	408 792	371 767	1.6	-9.1

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a] in TEUs and tons (percentage) 1979-1983	Rate of growth[a] in TEUs and tons (percentage) 1982/83
Japan:									
Kobe	Export	Full	604 730	680 518	746 012	713 771	778 347		
		Empty	65 204	78 673	55 958	57 865	50 963		
		Total	669 934	759 189	801 970	771 636	829 310	5.5	7.5
		Tons[d]	10 395 060	12 181 628	13 847 507	12 841 966	14 098 996	7.9	9.8
	Import	Full	548 357	555 814	588 926	547 363	567 609		
		Empty	80 251	141 049	172 868	185 375	226 092		
		Total	628 608	696 861	761 794	732 738	793 701	6.0	8.3
		Tons[d]	8 535 179	8 640 689	9 095 295	8 443 215	8 701 558	0.5	3.1
	Total TEUs of export and import		1 298 542	1 456 050	1 563 764	1 504 374	1 623 011	5.7	7.9
Nagoya[e]	Export	Full	86 971	101 949	110 405	112 193	153 348		
		Empty	7 281	8 684	5 325	7 619	8 546		
		Total	70 907	86 375	115 730	119 812	161 994	22.9	35.2
		Tons[d]	1 845 309	2 218 919	2 356 644	2 454 354	3 328 817	15.9	35.6
	Import	Full	55 397	77 721	78 790	83 845	100 806		
		Empty	6 128	17 512	32 771	40 647	53 101		
		Total	61 525	75 906	111 561	124 492	153 907	25.8	23.6
		Tons[d]	1 233 873	1 271 438	1 207 837	1 380 171	1 659 290	7.7	20.2
	Total TEUs of export and import		132 432	162 281	227 291	244 304	315 901	24.3	29.3

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a/] in TEUs and tons (percentage) 1979-1983	Rate of growth[a/] in TEUs and tons (percentage) 1982/83
Japan (continued)									
Tokyo	Export	Full	246 650	285 793	315 077	297 352	314 298		
		Empty	45 021	33 201	36 509	39 235	46 783		
		Total	291 671	318 994	351 586	336 587	361 081	5.5	7.3
		Tons[d/]	4 562 531	5 315 960	5 837 001	5 332 321	5 506 982	4.8	3.3
	Import	Full	263 929	254 000	253 980	246 937	264 617		
		Empty	25 149	58 511	89 596	78 981	72 623		
		Total	289 078	312 511	343 576	325 918	337 240	3.9	3.5
		Tons[d/]	4 410 803	4 248 066	4 269 481	4 264 395	4 510 301	0.6	5.8
	Total TEUs of export and import		580 749	631 505	695 162	662 505	698 321	4.7	5.4
Yokohama	Export	Full	253 560	347 454	397 435	388 585	439 804		
		Empty	50 766	52 547	32 253	40 243	37 436		
		Total	304 326	400 001	429 688	428 828	477 240	11.9	11.3
		Tons[d/]	4 581 214	6 222 846	7 559 090	7 908 178	8 913 233	18.1	12.7
	Import	Full	206 815	240 877	263 096	277 180	301 145		
		Empty	44 380	81 147	119 718	137 241	146 783		
		Total	251 195	322 024	382 814	414 421	447 928	15.6	8.1
		Tons[d/]	3 072 357	3 332 978	3 485 696	3 872 733	4 136 975	7.7	6.8
	Total TEUs of export and import		555 521	722 025	812 502	843 249	925 168	13.6	9.7

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a/] in TEUs and tons (percentage) 1979-1983	1982/83
New Zealand:									
Auckland Container Terminal	Export	Full	33 541	34 606	35 681	40 383	46 410		
		Empty	9 552	8 377	5 973	8 271	5 667		
		Total	43 093	42 983	41 654	48 654	52 077	4.8	7.0
		Tons	502 180	514 061	545 628	615 657	741 623	10.2	20.5
	Import	Full	31 860	34 042	31 566	39 963	33 608		
		Empty	12 646	10 741	13 686	13 025	17 302		
		Total	44 506	44 783	45 252	52 988	50 910	3.4	-3.9
		Tons	629 689	660 625	594 198	772 758	648 034	0.7	-16.1
	Total TEUs of export and import		87 599	87 766	86 906	101 642	102 987	4.1	1.3
Wellington[f/g/]	Export	Full	36 110	34 507	33 723	35 871	33 996		
		Empty	3 271	3 798	2 230	2 337	1 644		
		Total	39 381	38 305	35 953	38 208	35 640	-2.5	-6.7
		Tons	437 740	429 559	438 099	471 715	464 963	1.5	-1.4
	Import	Full	19 536	18 090	15 683	18 200	14 270		
		Empty	15 383	14 115	16 084	16 645	15 977		
		Total	34 919	32 205	31 767	34 845	30 247	-3.5	-13.2
		Tons	352 435	326 940	284 127	325 861	259 676	-7.3	-20.3
	Total TEUs of export and import		74 300	70 510	67 720	73 053	65 887	-3.0	-9.8

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a] in TEUs and tons (percentage) 1979-1983	1982/83
					Developing economies				
Hong Kong:[e]	Export	Full	358 611	401 114	456 814	521 329[c]	568 363[c]		
		Empty	65 856	90 330	88 422	94 286[c]	109 893[c]		
		Total	424 467	491 444	545 236	615 615	678 256	12.4	10.2
		Tons	4 465 646	4 710 488	4 984 690	4 846 610	5 129 347	3.5	5.8
	Import	Full	315 041	370 516	395 655	441 990[c]	471 017[c]		
		Empty	104 084	125 347	127 388	161 563[c]	202 721[c]		
		Total	419 125	495 863	523 043	603 553	673 738	12.6	11.6
		Tons	5 050 179	5 451 297	5 851 382	5 696 195	5 816 400	3.6	2.1
	Total TEUs of export and import		843 592	987 307	1 068 279	1 219 168	1 351 994	12.5	10.9
India:[h]									
Bombay	Export	Full	16 816	34 474	43 482	54 049	52 970		
		Empty	2 189	3 955	6 662	9 215	13 173		
		Total	19 005	38 429	50 144	63 264	66 143	36.6	4.6
		Tons	177 660	374 992	480 416	586 210	598 735	35.5	2.1
	Import Empty	Full	8 230	25 523	25 728	44 492	42 783		
		Empty	11 645	13 882	25 409	24 144	21 769		
		Total	19 875	39 405	51 137	68 636	64 552	34.2	-5.9
		Tons	104 598	319 532	327 526	583 595	576 597	53.2	-1.2
	Total TEUs of export and import		38 880	77 834	101 281	131 900	130 695	35.4	-0.9

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a/] in TEUs and tons (percentage) 1979-1983	Rate of growth[a/] in TEUs and tons (percentage) 1982/83
India (continued)									
Calcutta	Export	Full	618	1 615	6 102	11 096	15 014		
		Empty	337	356	1 250	1 769	2 683		
		Total	955	1 971	7 352	12 865	17 697	107.5	37.6
		Tons	8 905	22 702	84 649	124 605	165 502	107.6	32.8
	Import	Full	347	1 109	4 454	5 091	5 292		
		Empty	574	1 398	3 662	9 996	10 395		
		Total	921	2 507	8 116	15 087	15 687	103.1	4.0
		Tons	4 475	12 889	53 147	62 179	65 839	95.8	5.9
	Total TEUs of export and import		1 876	4 478	15 468	27 952	33 384	105.4	19.4
Cochin[d/]	Export	Full	2 124	7 367	10 202	14 219	17 490		
		Empty	313	543	702	726	900		
		Total	2 437	7 910	10 904	14 945	18 390	65.7	23.0
		Tons	30 985	109 599	128 835	130 788	166 100	52.2	27.0
	Import	Full	322	696	1 190	1 930	2 170		
		Empty	1 567	5 223	8 806	13 044	16 500		
		Total	1 889	5 919	9 996	14 974	18 670	77.3	24.7
		Tons	3 837	6 818	9 655	16 263	20 600	52.2	26.7
	Total TEUs of export and import		4 326	13 829	20 900	29 919	37 060	71.1	23.9

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a] in TEUs and tons (percentage) 1979-1983	1982/83
Indonesia:									
Tanjung Priok[d]	Export	Full[i]	7 521	8 131	9 983	10 315	9 982		
		Empty[i]	10 172	21 614	38 951	49 089	53 269		
		Total[i]	17 693	29 745	48 934	59 404	63 251	37.5	6.5
		Tons	77 323	79 427	108 420	109 078	120 132	11.6	10.1
	Import	Full[i]	16 121	30 417	48 340	60 220	57 368		
		Empty[i]	226	209	44	39	328		
		Total[i]	16 347	30 626	48 384	60 259	57 696	37.1	-4.2
		Tons	196 883	361 293	565 849	741 243	753 655	39.9	83.5
	Total TEUs of export and import		34 040	60 371	97 318	119 663	120 947	37.3	1.7
Malaysia:									
Penang	Export	Full	14 391	18 623	23 441	26 618	36 690		
		Empty	3 430	3 842	4 629	6 001	7 214		
		Total	17 821	22 465	28 070	32 619	43 904	25.3	34.6
		Tons	245 500	348 600	455 000	569 000	697 000	29.8	22.5
	Import	Full	13 408	16 765	19 848	24 038	29 984		
		Empty	3 950	5 408	8 421	8 216	12 725		
		Total	17 358	22 173	28 269	32 254	42 709	25.2	32.4
		Tons	280 400	304 500	378 000	447 000	576 000	19.7	28.9
	Total TEUs of export and import		35 179	44 638	56 339	64 873	86 613	25.3	33.5

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a] in TEUs and tons (percentage) 1979-1983	1982/83
Malaysia (contineud)									
Port Kelang	Export	Full	34 037	38 718	40 122	41 921	50 758		
		Empty	23 731	23 130	33 939	33 131	43 425		
		Total	57 768	61 848	74 061	75 052	94 183	13.0	25.5
		Tons[d]	479 698	579 674	912 406	923 017	1 060 800	21.9	14.9
	Import	Full	57 273	63 556	71 076	76 894	92 510		
		Empty	2 240	1 651	3 168	5 285	6 767		
		Total	59 513	65 207	74 244	82 179	99 277	13.6	20.8
		Tons[d]	591 282	673 128	1 462 701	1 599 620	1 659 200	29.4	3.7
	Total TEUs of export and import		117 281	127 055	148 305	157 231	193 460	13.3	23.0
Pakistan:[j]									
Karachi[k]	Export	Full	9 743	16 569	25 934	34 612	45 119		
		Empty	1 010	2 687	2 719	8 769	11 544		
		Total	10 753	19 256	28 653	43 381	56 663	51.5	30.6
		Tons	...	...	200 476	386 237	488 839	...	26.6
	Import	Full	7 135	15 627	26 118	35 432	55 783		
		Empty	4 880	5 254	5 399	10 699	11 783		
		Total	12 015	20 881	31 517	46 131	67 566	54.0	46.5
		Tons	...	...	219 259	420 064	544 853	...	29.7
	Total TEUs of export and import		22 768	40 137	60 170	89 512	124 229	52.8	38.8

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a/] in TEUs and tons (percentage) 1979-1983	1982/83
Papua New Guinea:									
Lae[c/ 1/]	Export	Full	1 704	6 862	6 972	7 453	6 000		
		Empty	1 771	6 504	2 438	8 047	7 000		
		Total	3 475	13 366	9 410	15 500	13 000	39.1	-16.1
		Tons		137 240	139 440	149 060	112 000		-24.9
	Import	Full	3 522	11 218	10 675	11 811	10 000		
		Empty	558	2 435	5 697	3 526	2 000		
		Total	4 080	13 653	16 372	15 337	12 000	31.0	-21.8
		Tons		224 360	213 500	236 220	200 000		-15.3
	Total TEUs of export and import		7 555	27 019	25 782	30 837	25 000	34.9	-18.9
Port Moresby[e/]	Export	Full	796	1 061	1 357	2 745	4 133		
		Empty	4 834	5 126	4 995	6 505	8 015		
		Total	5 630	6 187	6 352	9 250	12 148	21.2	31.3
		Tons[1/]	16 716	26 120	27 140	54 900	82 660	49.1	50.6
	Import	Full	5 740	7 398	6 580	9 447	12 314		
		Empty	35	50	61	248	435		
		Total	5 775	7 448	6 641	9 695	12 749	21.9	31.5
		Tons	120 540	136 120	131 600	188 940	246 280	19.6	30.3
	Total TEUs of export and import		11 405	13 635	12 993	18 945	24 897	21.5	31.4

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a] in TEUs and tons (percentage) 1979-1983	1982/83
Philippines:									
Manila International Port[c]	Export	Full	7 421	19 326	28 222	31 933	38 463		
		Empty	4 542	9 945	5 157	21 164	18 638		
		Total	11 963	29 271	33 379	53 097	57 101	47.8	7.5
		Tons	38 005	108 150	176 335	161 607	171 303	45.7	6.0
	Import	Full	11 591	27 797	28 647	51 440	55 815		
		Empty	1 370	3 335	3 252	4 776	6 146		
		Total	12 961	31 132	31 899	56 216	61 961	47.9	10.2
		Tons	103 325	280 794	298 274	543 619	576 236	53.7	6.0
	Total TEUs of export and import		24 924	60 403	65 278	109 313	119 062	47.8	8.9
Manila (South Harbour)[c]	Export	Full	70 612	69 852	61 946	53 117	53 876		
		Empty	40 762	24 713	24 201	25 464	26 142		
		Total	111 374	94 565	86 147	78 581	80 018	-7.9	1.8
		Tons	941 343	899 900	904 122	949 000	...	...	...
	Import	Full	105 906	92 535	97 441	90 505	97 974		
		Empty	6 845	8 673	9 862	7 152	7 647		
		Total	112 751	101 208	107 303	97 657	105 621	-1.6	8.2
		Tons	1 328 321	1 149 462	1 075 416	1 026 314	1 087 893	-4.9	6.0
	Total TEUs of export and import		224 125	195 773	193 450	176 238	185 639	-4.6	5.3

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a] in TEUs and tons (percentage) 1979-1983	1982/83
Republic of Korea:									
Busan[k]	Export	Full	195 313	235 531	282 004	276 228	431 000		
		Empty	29 191	27 997	26 747	36 262	54 000		
		Total	224 504	263 528	308 751	312 490	485 000	21.2	55.2
		Tons	6 083 793	7 564 710	9 687 934	10 200 330	11 527 000	17.3	13.0
	Import	Full	157 166	135 917	165 642	180 379	288 000		
		Empty	20 260	37 940	52 696	59 467	98 000		
		Total	177 426	173 857	218 338	239 846	386 000	21.4	60.9
		Tons	3 158 657	2 849 313	3 790 109	4 328 459	4 891 000	11.5	13.0
	Total TEUs of export and import		401 930	437 385	527 089	552 336	871 000	21.2	57.7
Singapore:	Export	Full[k]	278 572	357 677	418 355	429 585	488 085		
		Empty[k]	67 939	96 012	112 844	123 695	150 499		
		Total[k]	346 511	453 689	531 199	553 280	638 584	16.5	15.4
		Tons[c]	4 812 061	6 104 047	7 213 164	7 385 732	8 636 404	15.7	16.9
	Import	Full[k]	303 135	387 808	447 610	478 279	556 702		
		Empty[k]	48 860	75 523	85 695	84 729	79 031		
		Total[k]	351 995	463 331	533 305	563 008	635 733	15.9	12.9
		Tons[c]	5 447 634	6 445 440	7 459 980	8 287 732	10 130 272	16.8	22.2
	Total TEUs of[k] export and import		698 506	917 020	1 064 504	1 116 288	1 274 317	16.2	14.2

Table 11 (continued)

Country or area, and port	Direction		1979	1980	1981	1982	1983	Rate of growth[a/] in TEUs and tons (percentage) 1979-1983	1982/83
Sri Lanka:									
Colombo[c/]	Export	Full	6 432	15 959	25 356	43 978	60 500		
		Empty	949	3 355	2 363	5 544	7 000		
		Total	7 381	19 314	27 719	49 522	67 500	73.9	36.3
		Tons	72 412	161 975	375 480	578 458	619 300	71.0	7.1
	Import	Full	5 228	15 429	17 523	34 093	59 100		
		Empty	3 814	5 952	12 566	19 629	11 000		
		Total	9 042	21 381	30 089	53 722	70 000	66.9	30.5
		Tons	90 956	199 985	243 941	456 151	536 600	55.8	17.6
	Total TEUs of export and import		16 423	40 695	57 808	103 244	137 600	70.[illegible]	33.3
Thailand:									
Bangkok	Export	Full	69 939	83 746	104 915	119 130	135 204		
		Empty	11 349	9 489	16 679	8 461	17 130		
		Total	81 288	93 235	121 594	127 591	152 334	17.0	19.4
		Tons	675 799	895 174	1 058 775	1 155 565	1 330 444	18.4	15.1
	Import	Full	76 493	81 580	106 142	103 176	134 624		
		Empty	6 467	14 612	13 760	28 657	17 566		
		Total	82 960	96 192	119 902	131 833	152 190	16.4	15.4
		Tons	776 172	839 050	1 126 407	1 107 361	1 495 795	17.8	35.1
	Total TEUs of export and import		164 248	189 427	241 496	259 424	304 524	16.7	17.4

Table 11 (continued)

Sources: Replies from the Governments;
Republic of Korea: (1) Korea Maritime and Port Administration, Statistical Year Book of Maritime and Ports, 1983;
(2) Containerization International Year Book 1984.

Notes: ... Not available.
a/ Annual growth rate based on compound rate between 1979 and 1983.
b/ Fiscal year 1980 ends on 30 June.
c/ Data based on Containerization International Year Book.
d/ Freight tons.
e/ Port of trans-shipment.
f/ Fiscal year: October-September.
g/ Containers handled at Wellington Container Terminal.
h/ Fiscal year: April-March.
i/ Containers of all types.
j/ Fiscal year: July-June.
k/ Including trans-shipment.
l/ Figure for 1983 is estimated by Containerization International Year Book.

Table 12. Ratio of loaded containers at selected ports in the Asian and Pacific region

Country or area	Port	1979	1980	1981	1982	1983
Australia	Brisbane	0.54	0.64	0.74	0.84	0.70
	Fremantle	0.76	0.84	0.98	0.85	0.89
	Melbourne	1.14	1.19	1.19	1.14	1.09
	Sydney	1.59	1.65	1.79	2.03	1.75
Hong Kong	Hong Kong	0.88	0.92	0.87	0.85	0.83
India	Bombay	0.49	0.74	0.59	0.82	0.81
	Calcutta	0.56	0.69	0.73	0.46	0.35
	Cochin	0.15	0.09	0.12	0.14	0.12
Indonesia	Tg. Priok	2.14	3.74	4.84	5.84	5.75
Japan	Kobe	0.91	0.82	0.79	0.77	0.73
	Nagoya	0.64	0.76	0.71	0.75	0.66
	Tokyo	1.07	0.89	0.81	0.83	0.84
	Yokohama	0.82	0.69	0.66	0.71	0.68
Malaysia	Penang	0.93	0.90	0.85	0.90	0.82
	Port Kelang	1.68	1.64	1.77	1.83	1.82
New Zealand	Auckland	0.95	0.98	0.88	0.99	0.72
	Wellington	0.54	0.52	0.46	0.51	0.42
Pakistan	Karachi	0.73	0.94	1.01	1.02	1.24
Papua New Guinea	Lae	2.07	1.63	1.53	1.58	1.67
	Port Moresby	7.21	6.97	4.85	3.44	2.98
Philippines	Manila International	1.56	1.44	1.01	1.61	1.45
Republic of Korea	Busan	0.80	0.58	0.59	0.65	0.57
Singapore	Singapore	1.09	1.08	1.07	1.11	1.14
Sri Lanka	Colombo	0.81	0.97	0.69	0.77	0.98
Thailand	Bangkok	1.09	0.97	1.01	0.87	1.00

Source: Computed from data supplied by member governments.

Note: "Ratio" in this table is obtained by dividing import of full containers by export of full containers.

62. The shortages of landside storage and processing areas continues to be a problem for most of the ports in the developing countries and areas. This constraint has in many instances resulted in congestion, slow clearance of cargo and reduced operational efficiency, thus nullifying appreciably many of the economic benefits of containerization. Inadequate communication links between ports and their hinterlands in developing countries necessitates considerably more container freight station facilities and open storage areas be provided within the ports. However, countries are now presented with the opportunity to improve this situation. Even though large volumes of less-than-container load traffic will continue, there is a potential for the development of inland container depots which will assist more effective distribution of cargoes and relieve traffic congestion.

III. MAJOR PORT DEVELOPMENTS

63. During the period of this review, port development projects in developing member countries in the Asian and Pacific region continued to be funded mainly through international lending agencies and through bilateral assistance. A significant volume of investment continued to be devoted to the rehabilitation of ports, upgrading existing facilities and enhancing operational efficiency to enable ports in the region to handle larger vessels and especially to meet the demands of containerization.

64. The policy of developing secondary ports is continuing as exemplified by the upgrading of the ports of Songkhla and Phuket, in southern Thailand, and the out-ports in Burma and Indonesia.

65. Due to the long lead time in port development projects, it is not possible to list the scale of investment nor the progress of such projects on an annual basis, however, some of the interesting developments are listed.

66. Bangladesh. An extensive programme, which includes the construction of new berths, improving existing facilities and the provision of cargo handling equipment designed to provide the Port of Chittagong with the necessary capacity to meet the anticipated growth in general cargo and container traffic into the early 1990s has begun. A substantial training programme for port workers and management is also to be undertaken as an integrated element of this project.

/67.

67. Burma. A project is being undertaken to convert some existing facilities at the Port of Rangoon for container handling. At the same time a project to rehabilitate and improve eight out-ports to enable them to serve their respective hinterlands more economically and efficiently is in progress.

68. China. Facilities at the ports of Huangpu, Shanghai and Tianjin among others are being modernized and expanded to help meet increased traffic requirements. The programme of upgrading ports includes staff training. A containerization study covering the identification of intermodal terminal sites, related port container handling requirements and transportation demands to optimize the potential capacities of the ports is being undertaken.

69. Fiji. Technical assistance has been provided to the Government to help plan the modernization and expansion of the Port of Lautoka on the west coast of Viti Levu with a view to meeting increased traffic demands and changed shipping requirements and cargo-handling methods. The project to convert existing facilities at the Port of Suva to handle container traffic has been completed.

70. Hong Kong. The first of a series of projects aimed at optimizing the utilization of existing berths at the container port has started. At the same time, a phased programme for the eventual development of three more container terminals has been formulated. A port development strategy study is presently being undertaken to identify the demands for port facilities up to the end of the century.

71. India. India's first purpose-built container terminal was commissioned in Madras Port in 1983. At the same time planning for the development of Nava Sheva as a satellite port for Bombay is continuing with an anticipated investment of approximately $US 750 million. Work to encourage multimodal transportation of containers to inland container depots at various sites continues.

72. Indonesia. A "gateway" ports project is being implemented within which four key ports have been identified in the Indonesian archipelago, which will act as foci for international traffic and trans-shipment centres for Indonesian containerized cargo. Another project that includes the provision of urea-handling facilities at three ports and improved rail services designed to enhance communications with the hinterland of the respective ports is being implemented.

/73.

73. Malaysia. Work on a national port master plan is soon to begin. Reclamation work for a massive development has started at Port Kelang to meet an anticipated increase in traffic. At the same time plans for new facilities are being drawn up for the ports of Penang, Kuantan and Bintulu while berth facilities are being constructed at Johore Port to handle containers. The possibility of "privatizing" some of the port facilities in Malaysia is being extensively discussed.

74. Pakistan. Seven new berths have been completed at Port Qasim. Additionally plans are being drawn up to develop a container terminal at Karachi.

75. Papua New Guinea. As a result of a preliminary technical and economic analysis of 16 ports, significant investments are soon to be made in port infrastructure throughout the Papua New Guinea Harbours Board's facilities around the country. As an important integral part of this work ESCAP has been requested to assist in the implementation of a port management information system.

76. Philippines. A wide range of port development projects are being implemented in the Philippines, including extension of the International Container Terminal in Manila and new berth construction at Cebu and Iloilo specifically for container operations. New plans are being prepared for the refurbishment of the domestic port in the North Harbour of Manila.

77. Republic of Korea. Technical assistance has been provided to help formulate plans for the future developments of Inchon Port and to determine the levels of investment necessary to meet the forecast traffic demands on the port to the year 1990. A study is currently being undertaken to identify the parameters and a location for developing a new port.

78. South Pacific islands. A project that includes the provision of a new packing shed, a new wharf and the rehabilitation of an existing wharf is being implemented in the Cook Islands.

79. Sri Lanka. The conversion of existing facilities for operation as a container terminal with gantry cranes has been completed at the Port of Colombo. At the same time work has started on the development of two purpose-built container berths at the port, the plans for which have been recently modified to enable the facilities to accept the new generation of larger container ships.

/80.

80. Thailand. The Government of Thailand is undertaking a major port investment programme to improve the port operations situation. This includes the construction of secondary ports at Songkhla and Phuket in southern Thailand, the development of a commercial and industrial port at Laem Chabang and Map Ta Phut respectively on the eastern seaboard of Thailand. At the same time the Government is actively pursuing its declared policy to review the feasibility of privatizing some or all of the facilities at these ports.

IV. BULK

81. During the period covered by this review there does not appear to be a definitive pattern to the activity among the small number of bulk commodities that are reported to be handled in the region. It may however be of interest to note that a number of ports in the region registered negative growth in the importation of bulk petroleum and crude. This may, to some extent, be attributed to a switch towards solid fuel as an energy source (see table 13).

/Table 13.

Table 13. Foreign trade cargo handled in major ports of selected countries and areas in the Asian and Pacific region

(Thousand metric tons)

Country or area	Port	Type	1979	1980	1981	1982	1983
Australia:	Fremantle	Total bulk cargo loaded:	5 820	5 902	5 931	6 357	3 000
		Petroleum/crude	1 095	1 227	1 189	1 176	1 403
		Other liquid bulk	82	243	212	190	177
		Dry bulk - minerals	3 152	1 819	3 213	2 803	3 154
		Grain and agricultural products	1 474	2 574	1 276	2 130	3 174
		Other dry bulk	17	39	41	58	92
		Total bulk cargo unloaded:	6 748	6 461	6 297	5 986	5 762
		Petroleum/crude	4 718	4 711	4 354	4 483	4 268
		Other liquid bulk	526	585	674	670	613
		Dry bulk - minerals	1 408	1 065	1 174	740	638
		Grain and agricultural products	60	62	45	48	55
		Other dry bulk	36	38	50	45	98
	Melbourne[a/]	Total bulk cargo loaded:	679	746	801	898	734
		Petroleum/crude	246	345	345	567	471
		Other liquid bulk	102	82	82	79	92
		Dry bulk - minerals	...	...	...	...	...
		Grain and agricultural products	...	...	...	...	...
		Other dry bulk	332	320	374	252	171
		Total bulk cargo unloaded:	619	791	707	454	583
		Petroleum/crude	231	377	307	137	176
		Other liquid bulk	268	285	244	237	253
		Dry bulk - minerals	...	...	...	...	...
		Grain and agricultural products	...	...	...	...	...
		Other dry bulk	120	130	156	64	154

Table 13 (continued)

Country or area	Port	Type	1979	1980	1981	1982	1983
Burma	Rangoon	Total bulk cargo loaded:	...	...	987	933	1 072
		Petroleum/crude	...	...	126	31	44
		Other liquid bulk	-	-	-	-	-
		Dry bulk - minerals	...	...	6	6	33
		Grain and agricultural products	...	...	834	833	969
		Other dry bulk	...	...	22	63	26
		Total bulk cargo unloaded:	...	...	30	71	23
		Petroleum/crude	-	-	-	-	-
		Other liquid bulk	...	...	21	20	16
		Dry bulk - minerals	...	...	8	51	7
		Grain and agricultural products	-	-	-	-	-
		Other dry bulk	-	-	-	-	-
China	Shanghai	Total bulk cargo loaded:	25 690	26 830	25 900	28 550	28 160
		Petroleum/crude	1 540	1 810	1 780	1 710	1 560
		Other liquid bulk	...	...	...	...	...
		Dry bulk - minerals	...	...	...	...	...
		Grain and agricultural products	2 020	2 230	2 388	2 850	2 270
		Other dry bulk	...	...	...	...	...
		Total bulk cargo unloaded:	57 810	58 000	57 450	61 210	63 740
		Petroleum/crude	10 070	9 640	9 340	8 820	8 490
		Other liquid bulk	...	...	...	...	...
		Dry bulk - minerals	...	...	...	...	...
		Grain and agricultural products	3 560	3 560	4 070	4 240	3 370
		Other dry bulk	...	...	...	...	...

Table 13 (continued)

Country or area	Port	Type	1979	1980	1981	1982	1983
Fiji	Suva	Total bulk cargo loaded:	24	29	28	22	18
		Petroleum/crude	10	17	17	9	7
		Other liquid bulk	11	11	11	12	11
		Dry bulk - minerals	-	-	-	-	-
		Grain and agricultural products	3	1	-	1	...
		Other dry bulk	-	-	-	-	-
		Total bulk cargo unloaded:	233	221	227	241	191
		Petroleum/crude	147	145	160	153	109
		Other liquid bulk	-	-	-	-	-
		Dry bulk - minerals	23	21	18	26	16
		Grain and agricultural products	63	55	49	62	66
		Other dry bulk	-	-	-	-	-
Hong Kong	Port Victoria	Total bulk cargo loaded:	125	134	108	184	169
		Petroleum/crude	109	130	106	178	161
		Other liquid bulk	...	...	...	...	...
		Dry bulk - minerals	-	-	-	-	-
		Grain and agricultural products	5	1	-	-	-
		Other dry bulk	11	3	2	6	8
		Total bulk cargo unloaded:	9 238	9 751	10 413	11 458	12 289
		Petroleum/crude	6 505	6 557	6 968	6 555	5 573
		Other liquid bulk	...	...	...	...	...
		Dry bulk - minerals	12	12	59	1 529	3 950
		Grain and agricultural products	348	317	263	402	205
		Other dry bulk	2 373	2 865	3 123	2 972	2 561

Table 13 (continued)

Country or area	Port	Type	1979	1980	1981	1982	1983
India	Calcutta	Total bulk cargo loaded:	279	112	27	68	36
		Petroleum/crude	4	-	-	16	-
		Other liquid bulk	-	-	-	-	-
		Dry bulk - minerals	275	112	27	52	36
		Grain and agricultural products	-	-	-	-	-
		Other dry bulk	-	-	-	-	-
		Total bulk cargo unloaded:	3 753	4 227	4 953	4 113	4 178
		Petroleum/crude	2 907	3 491	4 098	3 243	3 089
		Other liquid bulk	100	88	107	105	75
		Dry bulk - minerals	687	648	680	583	591
		Grain and agricultural products	59	-	68	172	423
		Other dry bulk	-	-	-	-	-
Indonesia	Surabaya	Total bulk cargo loaded:	888	850	757	807	1 145
		Petroleum/crude	-	-	-	-	-
		Other liquid bulk	155	184	140	313	443
		Dry bulk - minerals	463	453	408	274	403
		Grain and agricultural products	102	69	52	96	157
		Other dry bulk	168	144	157	124	142
		Total bulk cargo unloaded:	1 590	2 131	2 248	2 285	2 427
		Petroleum/crude	-	-	-	-	-
		Other liquid bulk	102	7	22	10	43
		Dry bulk - minerals	402	457	704	682	599
		Grain and agricultural products	590	784	807	825	759
		Other dry bulk	496	883	715	768	1 026

Table 13 (continued)

Country or area	Port	Type	1979	1980	1981	1982	1983
Japan	Kobe[b/]	Total bulk cargo loaded:	646	785	714	585	479
		Petroleum/crude	..	..	2	..	..
		Other liquid bulk	527	682	602	485	428
		Dry bulk - minerals	22	16	13	15	9
		Grain and agricultural products	83	73	82	75	31
		Other dry bulk	14	14	15	10	11
		Total bulk cargo unloaded:	11 853	11 397	10 396	10 069	10 189
		Petroleum/crude	2 473	1 996	1 150	925	859
		Other liquid bulk	1 240	1 381	1 771	1 858	1 948
		Dry bulk - minerals	1 789	1 811	1 682	1 832	1 680
		Grain and agricultural products	6 032	5 916	5 533	5 256	5 558
		Other dry bulk	319	293	260	198	144
Malaysia	Port Kelang	Total bulk cargo loaded:	855	797	905	1 041	1 045
		Petroleum/crude	-	-	-	-	-
		Other liquid bulk	855	797	905	1 041	1 045
		Dry bulk - minerals	-	-	-	-	-
		Grain and agricultural products	-	-	-	-	-
		Other dry bulk	-	-	-	-	-
		Total bulk cargo unloaded:	1 072	1 592	1 519	1 662	1 907
		Petroleum/crude	661	780	829	819	930
		Other liquid bulk	38	43	45	66	92
		Dry bulk - minerals	-	418	297	408	401
		Grain and agricultural products	373	351	348	369	484
		Other dry bulk	-	-	-	-	-

Table 13 (continued)

Country or area	Port	Type	1979	1980	1981	1982	1983
New Zealand	Auckland	Total bulk cargo loaded:	17	19	18	19	28
		Petroleum/crude	1	1	1	1	7
		Other liquid bulk	16	18	17	18	21
		Dry bulk - minerals	-	-	-	-	-
		Grain and agricultural products	-	-	-	-	-
		Other dry bull	-	-	-	-	-
		Total bulk cargo unloaded:	1 691	1 744	1 526	2 028	1 485
		Petroleum/crude	1 340	1 362	1 171	1 649	1 161
		Other liquid bulk	59	71	67	63	56
		Dry bulk - minerals	54	47	46	44	39
		Grain and agricultural products	90	97	91	103	83
		Other dry bulk	148	167	151	169	146
Pakistan	Karachi	Total bulk cargo loaded:	3 038	3 399	3 617	3 548	3 080
		Petroleum/crude	881	1 091	994	1 069	511
		Other liquid bulk	416	212	265	433	650
		Dry bulk - minerals	10	19	23	2	7
		Grain and agricultural products	1 166	1 473	1 690	1 237	810
		Other dry bulk	566	604	645	803	1 101
		Total bulk cargo unloaded:	11 987	11 259	11 037	11 589	11 709
		Petroleum/crude	4 990	5 536	5 598	6 058	6 161
		Other liquid bulk	458	511	608	637	755
		Dry bulk - minerals	2 272	2 180	2 037	1 803	1 855
		Grain and agricultural products	2 276	671	308	358	462
		Other dry bulk	1 991	2 361	2 486	2 728	2 475

Table 13 (continued)

Country or area	Port	Type	1979	1980	1981	1982	1983
Philippines	Manila	Total bulk cargo loaded:	1 100	1 346	1 685	1 685	1 506
		Petroleum/crude	...	...	...	...	...
		Other liquid bulk	...	...	...	...	...
		Dry bulk - minerals	...	...	...	...	...
		Grain and agricultural products	...	...	...	...	...
		Other dry bulk	...	...	...	...	...
		Total bulk cargo unloaded:	9 842	9 366	9 744	9 545	8 038
		Petroleum/crude	...	...	...	...	...
		Other liquid bulk	...	...	...	...	...
		Dry bulk - minerals	...	...	...	...	...
		Grain and agricultural products	...	...	...	...	...
		Other dry bulk	...	...	...	...	...
Singapore	Singapore	Total bulk cargo loaded:	1 818	1 671	1 501	1 963	1 656
		Petroleum/crude	1 362	1 160	1 226	1 662	1 428
		Other liquid bulk	391	442	218	259	186
		Dry bulk - minerals)					
		Grain and agricultural products)	65	69	57	42	42
		Other dry bulk)					
		Total bulk cargo unloaded:	4 385	4 705	4 851	6 005	5 845
		Petroleum/crude	1 016	850	724	828	756
		Other liquid bulk	369	341	205	226	239
		Dry bulk - minerals)					
		Grain and agricultural products)	3 000	3 514	3 922	4 951	4 850
		Other dry bulk)					

Source: Information supplied by Governments.

Notes: - Nil
.. Less than 500 tons
... Not available
a/ In 1,000 revenue tons
b/ In 1,000 freight tons

Part three. Review of developments in inland waterways

I. OPTIMISTIC FUTURE OF INLAND WATERWAY TRANSPORT SYSTEMS

82. Inland waterways have traditionally been used to provide cheap transportation of bulk commodities of large volume and low value to and from inland destinations. They have the inherent advantages of low cost of transport, low adverse environment impact and high energy efficiency.

83. There is great potential for developing inland water transport in the region as there are many enormous rivers such as the Yangtze in China, the Irrawady in Burma, the Ganga in India, the Brahmaputra in Bangladesh, the Chao Phraya in Thailand and the Mekong which flows through or along the borders of six countries in South-East Asia. All of these rivers would be even more important in world terms if they were measured by the amount of water discharged each year or by the size of the population they support.

84. However, the inland waterway systems have tended to be neglected and have received extremely limited attention. Rapid advances in the technology of competing modes of transport, coupled with national transport policies geared to the promotion of rail and road transport, have in some countries, led to a relative decline in the significance of inland water transport. During the period under review, there have been slow changes in the use of inland waterways for transport in the region. Inland water transport thus remains relatively undeveloped in the overall transport network. This can be largely attributed to the poor state of waterway infrastructure, the scarce technical knowledge of waterway conservancy and maintenance, deficiencies in operation and maintenance of mechanical equipment, the lack of management and operational skills, and the inadequacy of useful information and regular statistical data which in turn is a result of the lack of investment in inland waterways over the year.

85. Nevertheless, in view of the vast contribution they could make to the development of rural areas and with the current concern for energy conservation as a stimulus, more and more riverine countries in the region are becoming aware of the potential of their inland waterways as an invaluable natural resource and of the savings that investments in inland water transport may bring. The demand for inland water transport has risen steadily and this trend is likely to continue. In some countries, the development of inland water transport is receiving active consideration. Others have considered modern waterways to be vital instruments of economic development. Consequently, a continuous development of inland water transport has taken place. The launching of the Transport and Communications Decade for Asia and the Pacific, 1985-1994 will accelerate the development of the industry.

/II.

II. GLOBAL SITUATION OF INLAND WATER TRANSPORT

86. The eccnomic situation throughout the world has been rather gloomy in 1983-1984, and even in the United States of America the recovery has not spread fast enough to bring noticeable increases in inland water transport activity.

87. One of the reasons has been that the re-allocation of a number of heavy industries from their former strongholds in the developed countries to the newly industrialized countries has dealt a severe blow to much traditional inland water traffic.

88. Similarly, although the price of oil has stopped increasing in real terms, fuel oil remains much more expensive than coal for use at the super thermal power stations, and many of these are left idle or converted to burn other fuels, resulting in the cutting down of the transportation of residual fuel oil by barges.

89. Even the transport coal has met some snags, especially in the United States of America because of the reduction of exports in line with the high value of the dollar, and in France where more than 50 per cent of electricity is now nuclear generated, with coal-fired power stations being phased out. Besides, throughout the world, coal consumption is more and more located near the coasts. With power stations and steel plants built in or near harbours, the percentage of commodities carried inland is less.

90. In the first half of 1984, however, world energy consumption was on the rise for the first time since 1980 and this turn of events may lead to a recovery in inland water traffic, badly hit in 1981, 1982 and 1983. A reasonable forecast for 1984 would be for this activity to return to the level of 1982, still far below the record levels of 1980.

91. One of the still depressed parts of the market is construction materials, which is down by about 50 per cent from their peak value in some countries. It is not clear when the building sector in Europe will fully recover from its present weakness, but that may take some time, public spending being somewhat restricted by budgetary constraints while private investments are hindered by high interest rates. However, building activity started picking up again in 1984 in the United States of America.

92. Ore transportation recovered in 1984, but is still far from record levels, especially in America. Good news comes mainly from the sustained activity in agricultural products, chemical products and fertilizers.

/93.

93. The transportation of containers on inland waterways is also on the rise, with more than 150,000 TEU being carried on the Rhine in 1983. This healthy growth rate of around 22 per cent per year is expected to continue. The opening of a regular container line on the Mississippi might well be the dawn of similar developments in the United States of America, where some activity has already been witnessed on the Columbia.

94. Inland water roll-on/roll-off craft have also been developed, either for cars (on the Seine and the Rhine) or for trucks (on the Danube and the Rhine). Some craft are even seaworthy.

95. The use of river-sea craft has spread in recent years. Such vessels are well suited to coastal or inter-island traffic. They include LASH and SEABEE barges and account for over 3 million tons of traffic on the Rhine, and over 5 million tons on the Danube. Such shipments are not shown in the statistics of the United States but they are fairly large. Strengthened inland water barges cross the Gulf of Mexico on a regular basis, and LASH/SEABEE barges are carried far inland at times. The use of deep-draughted sea-barges is also spreading, especially roll-on/roll-off barges.

96. Cumbersome cargoes are regular features of inland waterway transport: space rockets in France and the United States of America, the American Space Shuttle, nuclear reactors, large electro-generating units, parts of chemical plants, etc.

97. In South America, new developments are taking place, particularly in Colombia, where the Rio Magdalena is increasingly used by inland water transport. Already 200,000 tons of coal are carried to the coast, and plans have been drawn up to increase this flow to 6 million tons and over. Loading of deep sea vessels is to be done in a midstream operation. This operation is to start at a level of 2 million tons at Puerto Bolivar and 200,000 tons at Puerto Zuninga. Inland water barges are shuttled between the shore and floating cranes, which in turn load big bulk carriers.

98. In Africa, the Congo River carries traffic vital to the region and countries it serves, although not always large in numbers. The Nile fleet, both in the Sudan and in Egypt, has been rejuvenated and increased in recent years, and the prospects for inland water transport are good on this long river.

/99.

99. The trends of phasing out pull-towing as described in the 1982 Review has been confirmed; for instance in 10 European countries,[33/] the number of pulled barges (dumb barges) has been reduced from a total of 11,800 units in 1970 to only 1,989 in 1982.

100. Push-towing has developed steadily and in the same 10 countries the number of pushed barges has increased from 2,695 in 1970 to 5,721 in 1982. In the United States of America the increment in pushed barges between 1980 and 1982 alone was more than 2,700. The vitality of this technique is quite strong and it is spreading on all continents.

101. The number of self-propelled vessels in Europe has been reduced from the 1970 level of 28,372 in 10 countries, with a capacity of 12.3 million tons, to 15,248 only in 1982 with (10.2 million tons capacity). The turning point for them came in 1975, which can be described as the year when the transport crisis established itself for good in Europe. The graphs clearly demonstrate this. 1983 may well prove to be a second turning point, with levels of traffic well below any year in the 1970s, akin only to 1968. 1984 will probably see a recovery.

102. However, trends in China, the United States and USSR have been totally different from those in Europe, and it can be seen that growth, especially in terms of tons/kilometre, has been rather regular in these three countries which accounted for half of the tonnage and two-thirds of the world output from 1970 to 1981.

103. Such growth during the last decade is another proof that inland water transport is not a thing of the past, but an industry with a prospectful future.

III. REGIONAL COUNTRIES' DEVELOPMENT PLANS

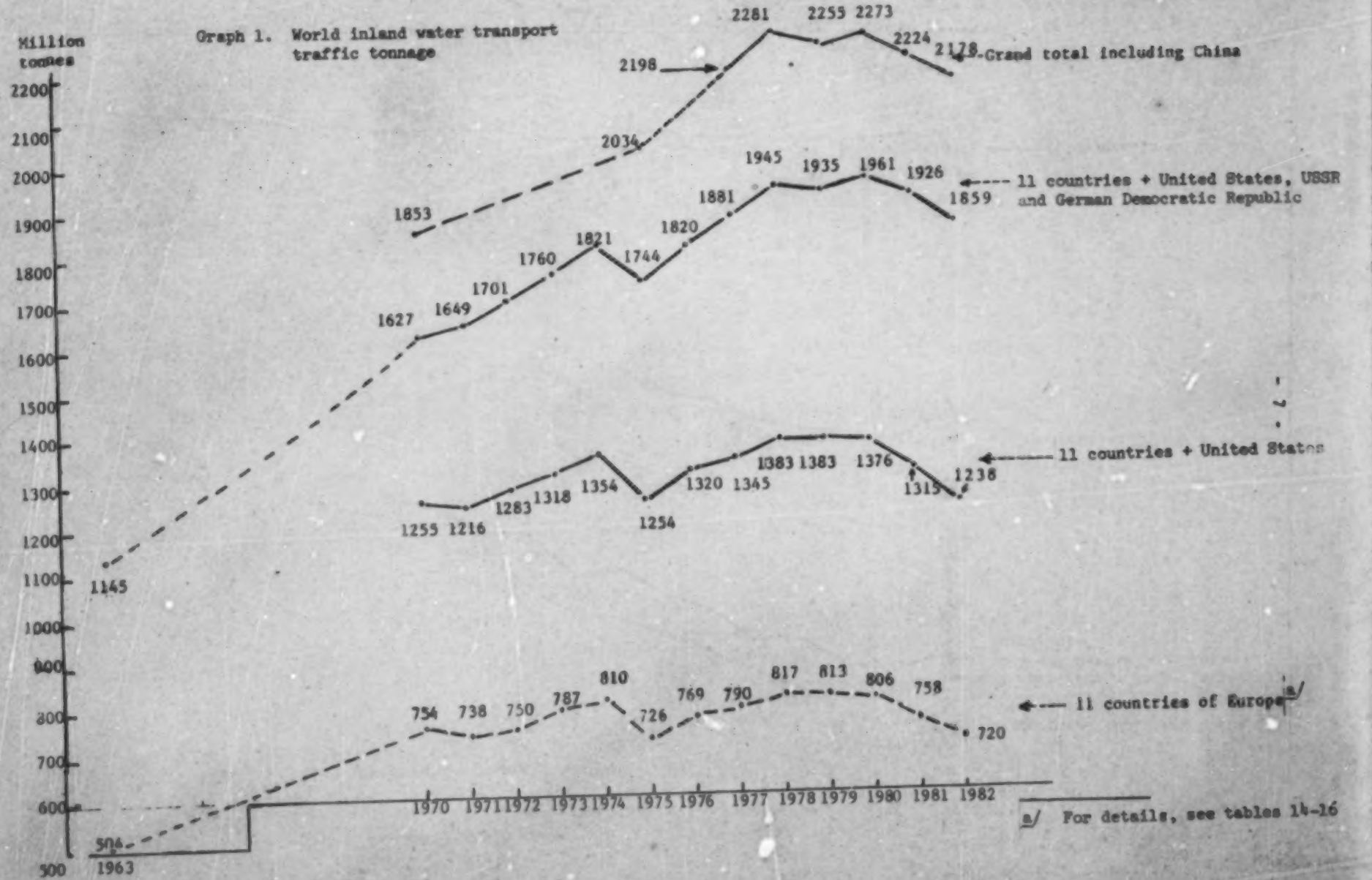
A. Bangladesh

104. The main projects implemented or being implemented during the second five-year plan related to excavation of waterways, construction of jetties and improvement of cargo handling facilities at existing ports, development of additional river ports and landing stations, replacement of old pontoons, vessels and aids to navigation, establishment of a telecommunication network and several feasibility studies.

/Graph I

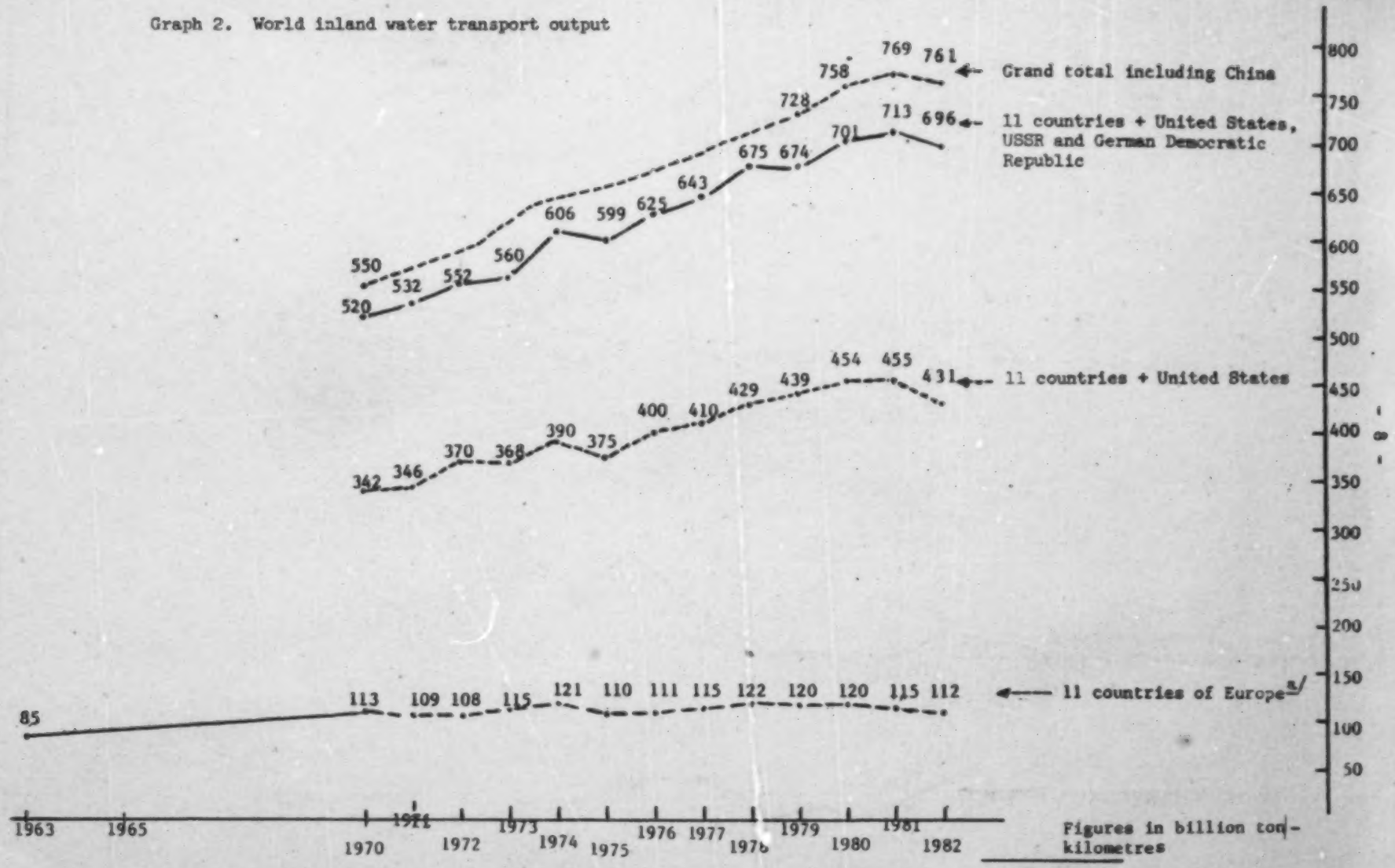
33/ Austria, Belgium, Czechoslovakia, France, Federal Republic of Germany, Hungary, the Netherlands, Poland, Switzerland and Yugoslavia.

Graph 1. World inland water transport traffic tonnage



a/ For details, see tables 14-16

Graph 2. World inland water transport output



Figures in billion ton-kilometres

a/ For details, see tables 14-16

Table 14. Inland water traffic in the world - 1980 (revised), showing share of push-towing

Country	Number a/		Capacity (thousand tons)			Tons carried (thousand tons)			Transport output (million ton-km)		
	Total	Push	Total	Push	Percentage	Total	Push	Percentage	Total	Push	Percentage
Austria	214	92	196	116.6	59.5	7 615	683	9.0	1 556	130	8.4
Belgium	3 297	153	1 843.7	156.8	8.5	100 930	9 868	9.8	5 852	411	7.0
Czechoslovakia	604	272	389.2	172.9	44.4	9 975	(4 430)	(44.4)	3 444	(1 529)	(44.4)
France	5 465	1 657	2 537.1	1 046.6	41.3	92 197	26 976	29.3	12 151	3 804	31.3
Germany, Federal Republic of	4 153	591	3 672	823.8	22.4	240 985	57 516	23.9	51 435	8 707	16.9
Hungary	280	99	241.1	128.5	53.2	3 524	(1 875)	(53.2)	1 874	(997)	(53.2)
Luxemburg	18	-	11.8	-	-	10 683	3 433	32.1	330	127	38.5
Netherlands	7 891	449	4 960	836.0	16.9	269 269	49 497 b/	18.4 b/	33 478	6 581	19.7
Poland	1 907	1 476	663.6	479.5	72.3	22 270	20 257	91.0	2 325	1 565	67.3
Switzerland	413	126	599.7	234.2	39.0	9 746	(3 800)	(39.0)	57	(22)	(39.0)
United Kingdom	35	10	9.6	1.6	16.7	4 947	1 393	28.2	78	11	14.1
United States c/	(33 377)	(28 691)	(42 737)	(40 440)	(94.6)	570 776	529 199	92.7	333 987	(316 843)	(94.9)
Yugoslavia	1 244	327	761.2	344.5	45.3	34 088	9 852	28.9	7 580	1 387	18.3
Sub-total	58 898	33 543	58 613.0	44 781.0	(76.4)	1 376 960	718 779	(52.2)	454 147	342 114	(75.3)
China			(5 830)	(400)	0.069	312 000			57 100		
German Democratic Republic						16 319			2 159		
USSR						568 000			244 000		
Grand total						2 273 279			758 306		

Source: United Nations Economic Commission for Europe, Annual Bulletin of Transport Statistics, 1981 (Geneva, 1982); Department of the Army, Corps of Engineers, Waterborne Commerce of the United States, 1980 (Washington, D.C., 1982); Designing and Planning Institute of Water Transport, Ministry of Communications, People's Republic of China.

Notes: a/ Push includes self-propelled pushing barges, pushed barges, pushed-towed barges, pusher craft and pusher tugs.

b/ Pushing in domestic transport is not accounted for.

c/ Great Lakes excluded, but rafting included (15.2 million tons and 1.0 billion ton-kilometre); excluding also inland part of ocean-going traffic.

( ) Figures in parentheses are approximate.

Table 15. Inland water traffic in the world - 1981, showing share of push-towing

Country	Number a/		Capacity (thousand tons)			Tons carried (thousand tons)			Transport output (million ton-km)		
	Total	Push	Total	Push	Percentage	Total	Push	Percentage	Total	Push	Percentage
Austria	218	94	200.4	120.1	59.9	7 168	677	9.4	1 428	127	8.9
Belgium	3 161	158	1 818.1	173.3	9.5	97 204	10 868	11.2	5 442	414	7.6
Czechoslovakia	632	299	394.4	178.2	45.2	10 551	(4 769)	(45.2)	3 636	1 643	(45.2)
France	5 435	1 718	2 552.8	1 095.0	42.9	83 571	24 265	29.0	11 068	3 456	31.2
Germany, Federal Republic of	3 920	594	3 547.5	814.2	23.0	231 715	56 666	24.5	50 010	8 199	16.4
Hungary	286	108	260.7	143.4	55.0	3 526	(1 939)	(55.0)	2 097	(1 153)	(55.0)
Luxemburg	17	-	11.4	-	-	9 347	2 811	30.1	292	105	36.0
Netherlands	7 833	628	5 095.2	894.2	17.5	253 799	47 407 b/	18.7	31 792	6 304 b/	19.8
Poland	1 754	1 390	607.3	454.4	74.8	16 569	15 100	91.1	1 868	1 307	67.0
Switzerland	447	125	645.2	253.8	39.3	9 261	(3 640)	(39.3)	53	(21)	(39.3)
United Kingdom	39	17	10.2	2.2	21.6	4 615	1 325	28.7	72	11	15.3
United States c/	(36 666)	(31 337)	(47 865.9)	(45 303.2)	(94.6)	556 947	520 294	93.4	339 450	(323 196)	(95.2)
Yugoslavia	1 242	331	766.6	349.4	45.6	31 118	8 991	28.9	7 532	1 338	17.8
Sub-total	61 650	36 799	63 775.7	49 781.4	(78.1)	1 315 391	698 752	(53.1)	454 740	347 274	(76.4)
China						298 000			96 500		
German Democratic Republic						16 629			2 359		
USSR						594 500			255 600		
Grand total						2 224 520			769 199		

Source: United Nations Economic Commission for Europe, Annual Bulletin of Transport Statistics, 1982 (Geneva, 1983); Department of the Army, Corps of Engineers, Waterborne Commerce of the United States, 1981 (Washington, D.C., 1983); Designing and Planning Institute of Water Transport, Ministry of Communications, People's Republic of China.

Notes: a/ Push includes self-propelled pushing barges, pushed barges, pushed-towed barges, pusher craft and pusher tugs.

b/ Pushing in domestic transport is not accounted for.

c/ Great Lakes excluded, but rafting included (10.7 million tons and 0.9 billion ton-kilometre); excluding also inland part of ocean-going traffic.

( ) Figures in parentheses are approximate. For United States, the survey of the fleet was made early in 1982.

Table 16. Inland water traffic in the world - 1982 (provisional), showing share of push-towing

Country	Number a/		Capacity (thousand tons)			Tons carried (thousand tons)			Transport output (million ton-km)		
	Total	Push	Total	Push	Percentage	Total	Push	Percentage	Total	Push	Percentage
Austria	214	94	195.7	120.1	61.4	6 623	721	10.1	1 377	151	11.0
Belgium	3 048	154	1 784.8	179.8	10.1	90 589	10 500	11.6	5 004	414	8.3
Czechoslovakia	678	363	443.1	238.3	53.8	10 883	(5 855)	(53.8)	3 683	1 981	(53.8)
France	5 227	(1 874)	2 463.6	(1 142.4)	46.4	76 409	20 341	26.6	10 190	3 082	30.2
Germany, Federal Republic of	3 806	585	3 459.3	781.8	22.6	221 899	52 277	23.6	49 401	7 593	15.4
Hungary	283	126	261.9	157.5	60.1	3 417	(2 055)	(60.1)	1 731	(1 041)	(60.1)
Luxemburg	16	-	11.1	-	-	9 317	3 334	35.8	289	(104)	(36)
Netherlands	7 829	(634)	5 227.6	(941.1)	18.0	241 133	55 401 b/	23.0	31 386	7 241 b/	23.1
Switzerland	432	142	629.1	245.9	39.1	8 146	(3 184)	(39.1)	49	(19)	(39.1)
United Kingdom	95	17	16.6	2.2	13.3	5 122	1 858	36.3	71	16	22.5
United States c/	(36 666)	(31 337)	(47 865.9)	(45 303.2)	94.6	518 061	488 201	94.2	318 482	306 293	(96.2)
Yugoslavia	1 216	342	754.7	356.4	47.2	29 450	8 640	29.3	7 362	1 312	17.8
Poland (1981)	(1 754)	(1 390)	607.3	454.4	74.8	16 569	15 100	91.1	1 868	1 307	67.0
Sub-total	61 264	37 058	63 720.7	49 923.1	78.3	1 237 618	(667 467)	(53.9)	430 893	(330 554)	(76.7)
China						320 000			65 100		
German Democratic Republic						16 830			2 290		
USSR						604 500			262 400		
Grand total						2 178 948			760 683		

Source: United Nations Economic Commission for Europe, Annual Bulletin of Transport Statistics, 1982 (Geneva, 1983);
Department of the Army, Corps of Engineers, Waterborne Commerce of the United States, 1982 (Washington, D.C., 1984);
Designing and Planning Institute of Water Transport, Ministry of Communications, People's Republic of China.

Notes: a/ Push includes self-propelled pushing barges, pushed barges, pushed-towed barges, pusher craft and pusher tugs.

b/ Pushing in domestic transport is not accounted for.

c/ Great Lakes excluded, but rafting included (11.5 million tons and 0.8 billion ton-kilometre); excluding also inland part of ocean-going traffic.

( ) Figures in parentheses are approximate.

105. A study was made in Bangladesh of the feasibility of moving containers within the country. Inland waterways were found the most accessible and least costly. A specific study may be undertaken for exploring the possibility of developing facilities for handling containerized cargo at one or two of the inland river ports.

106. A brief study made by experts from the United Kingdom has suggested that it may be possible to increase the speed of certain types of country boats by about 40 per cent through improvements in the rowing mechanism and the sail-holding rig at an additional investment of only 10 per cent. This would mean that engines need only be installed on country boats as a stand-by arrangement for use while travelling against strong currents.

B. Burma

107. Burma is in the midst of the fourth four-year plan for 1983-1986 which includes such new projects as construction of new vessels, increasing the power of "Kyant" tugs, major renovation of obsolete vessels, re-engining of vessels; and replacement of dockyard machinery and civil engineering works. According to the plan, inland water freight and passenger traffic will increase by 16.7 per cent and 20.4 per cent respectively.

108. The country's inland water transport corporation has placed an order for heavy-duty 360° steerable outboard propulsion units for shallow draught operation on vessels carrying cargo and passengers throughout the waterway system, particularly on the 1,300 miles of the Irrawady. These propulsion units will be used to replace the worn-out, conventional inboard engines as well as the steam paddle-wheelers, thereby avoiding expensive replacement of entire vessels.

C. China

109. China has been going all-out on the construction of inland waterways during the period under review. Inland water transport and waterway construction got off to a fresh start after years of hesitation. The development of inland water transport is currently regarded by the Government as strategically important.

110. The management and planning of nation-wide inland waterway transport have been strengthened with the founding of the Inland Water Transport Administration. Questions such as barrages and sluice-gates that hinder navigation have been set for solution. Master planning of navigation and waterway works for major river

/systems as

systems as Huihe, Zhujiang, Haihe, Changjiang, Heilongjiang, Minjiang and the Grand Canal, among others are well underway. Provincial and municipal inland water transport administrations have taken similar steps to re-arrange and consolidate their organization. Jiangsu province, the inland water transport of which is better developed, has laid down the principle of utilizing land and water simultaneously but giving water a bigger role to play, and has strengthened waterway management and maintenance. Prefectures, municipalities and counties in the province have all set up channel management sections and stations and have allocated more than 6,000 people to management. At present, a network of channel management and maintenance has been formed.

111. National standards for inland waterways navigation, regulations for aids to navigation in inland waterways and guidelines for the design of shiplocks, etc. are being prepared or revised.

112. The Government-subsidized Changjiang and Xiangjiang channel projects to link up with Qiantangjiang have already started. The locally-funded canal east of Zhejiang has already been cut through to the Luchiagou lock on the Mud river section of Huaihe, and the Shen River coal route has already been built. The dredging project in the Bulao river section of the Beijing-Hangzhou canal was begun in November 1983 and was completed in a little more than a month.

113. Plans are underway to expand the storage, docking and cargo handling facilities of river ports.

114. The new integrated pushing and towing system adopted for traffic on the Changjiang proved to be quite effective and became the prime mover of coal downstream of Wuhan, following the introduction of a large integrated pushing and towing fleet of 30 barges of 2,000 dwt and four push-tugs of 6,000 hp.

D. India

115. Inland water transport has been given a vital role in various plans. It is on the threshold of a spectacular development.

116. For the year 1983/84 provisions of Rs. 114.5 million for central schemes and Rs. 5.5 million for centrally-sponsored schemes have been made for development of inland water transport.

117. The main central schemes implemented or being implemented are:

(a) Acquisition of new vessels, provision of infrastructural facilities for riverside stations, capital repairs of old vessels, development of Rajabagan Dockyard at a total cost of Rs. 342 million;

/(b)

(b) Hydrographic surveys of important waterways;

(c) Grant of loan interest subsidy to inland water transport entrepreneurs;

(d) Operation of experimental-cum-promotional river services on the Ganga;

(e) Declaration of the Allahabad-Haldia stretch of the Ganga-Bhagirathi-Hooghly river system as a national waterway and provision of infrastructural facilities on the Farakka-Haldia stretch.

118. The important schemes implemented or being implemented under centrally sponsored schemes are as follows:

(a) Improvement of Buckingham Canal;

(b) Development of Cumbarjua Canal;

(c) Acquisition of dredging units for Narmada and Tapti;

(d) Development of inland water transport facilities on Quilon-Neendakara-Cheryazheekal waterway and acquisition of passenger and cargo boats by the Government of Kerala;

(e) Improvement of navigation along the River Mahanadi from Dholpur to Cuttack.

(f) Construction of jetties and acquisition of vessels for a ferry service on the Hooghly between Calcutta and Hawrah;

(g) Introduction of mechanized river services on the Jhelum.

119. Besides the Ganga, nine other major navigable waterways have been identified for consideration as national waterways.

120. The Government has also approved in principle, the proposal to set up the Inland Waterways Authority of India which inter alia will be responsible for the development and maintenance of national waterways.

E. Lao People's Democratic Republic

121. A financing agreement for improving the cargo-handling facilities at Thanaleng and Lak Si ports on the Mekong River was signed between the Governments of the Netherlands and the Lao People's Democratic Republic and the Interim Committee for Co-ordination of Investigations of the Lower Mekong Basin.

/122.

122. Thanaleng mainly handles the ferry cross-haul service to Nong Khai in Thailand from which the bulk of imports are transported into the Lao People's Democratic Republic. Lak Si, a typical long-haul port, does not have the facilities to handle in-coming and out-going cargo satisfactorily.

123. Apart from resulting in improved cargo handling and trans-shipment at minimal cost, the project will provide new permanent installations such as warehouses and transit sheds. Mechanical cargo-handling equipment, especially a long-reach crane, will be installed, while national personnel will be trained to handle this equipment.

F. Malaysia

124. The two main rivers in Peninsular Malaysia are the Perak and the Pahang. They are in limited use as means of transport.

125. In Sarawak, due to the lack of an extensive road transport system, most rural people have to depend on inland waterways for transportation purposes, including natural rivers and such man-made canals as the Beliong Canal, Bruit Tekajong Canal, Aikman Canal and Kut Canal.

126. The improvement works for the Beliong Canal carried out in 1982 involved the dredging of 2.2 km of the eastern end of the canal of which 1.2 km are new alignment. The top width of the canal was improved from a minimum of 15 m to 20 m. It was deepened for about an extra metre whereas in the unimproved condition, the water depth on the shallow end at low tide water level was around 30 cm or less. The improvement also related to cutting some of the bends of the canal and shortening the canal journey by more than 1 km. With the improvement of the canal bigger boats can go through it to and from Kuching without going round Tanjangg Embang, thus shortening the distance and also improving the safety of navigation, as in the typhoon season the sea around Tanjangg Embang is usually very rough.

127. The Bruit Tekajong Canal was designed to have an average top width of 25 m, bottom width of 15 m, and a depth of 3 m. In addition, a 12-ft by 14-ft lock gate will be constructed at the Tekajong end. Other supporting structures were also included. Construction started in 1979. The canal itself is about 50 per cent complete. The whole project is expected to be completed in 1986.

128. With the canal reconstructed, the people living on the northern coast of the Bruit Island can travel even in time of rough weather. It shortens the journey, provides a direct communication link between Bruit and Tekajong and also provides a drainage outlet to the land between these two places for agricultural purposes.

/129.

129. Some wharves of reinforced concrete or timber are currently in course of construction in such places as Marudi, Long Lama, Merapok, Song and Sangan. Others are being planned for Jalan Gambier, Lubok Antu, Trusan, Limbang and Lawas.

G. Philippines

130. A study to determine the feasibility of developing the Pasig River and Cavite coastal system as a water transport system is being planned. This will involve the evaluation of the existing laws, rules and regulations and practices; co-ordination with government agencies; information and statistical analyses and investment requirements for vessels and terminals.

H. Sri Lanka

131. The Canal Development Study Committee was appointed by the Government to review the feasibility of continuing the work of rehabilitating the Colombo-Puttalam Canal. In the first instance rehabilitation would permit navigation from the Kelani River to Maha Oya. Later rehabilitation would extend into the Colombo Biera system and north-west to Puttalam as most potential cargo originates from beyond Maha Oya. Cost comparisons were worked out for conveying for several commodities which originated close to the canal by barge, railway and lorry. Work is continuing on evaluating the benefits to other canal users, such as fishermen and tourists, and potential non-transport benefits, such as drainage, industrial water supply and other amenities.

I. Thailand

132. The total length of inland waterways in the country is around about 6,000 km, but only 1,750 km are usable in the rainy season and 1,150 km in dry season.

133. In the Fifth National Economic and Social Development Plan (1982-1986), the transportation and communication system will be restructured. Water transport is to increase by 5.4 per cent per annum.

134. Targets for the development of inland water transport have been formulated as follows:

(a) Increase the traffic volume in the improved inland waterway route from 1,549,000 tons in 1978 to 2,200,000 tons in 1986 (excluding construction materials), representing 17.5 per cent of total goods transported;

/(b)

(b) Develop inland waterway channels in the Chao Phraya River from Bangkok to Nakhon Sawan and in the Nan River from Nakhon Sawan to Taphan Hin. The project is comprised of training works, dredging, bank protection and aids to navigation on these rivers. It is well underway and is to be completed before April 1985;

(c) Construct cargo terminals at Nakhon Sawan and at Taphan Hin for use as inland water transport centres;

(d) As a pilot project, construct barges and pushers for use in waterways in the Chao Phraya and Nan rivers for better efficiency.

135. Special measures will be taken as follows:

(a) Inland waterways will be improved to provide year-round navigation. The improvement will cover the Chao Phraya, Nan, Pasak, Tachin (Suphan), Maeklong and Noi rivers, and the Anusasanand and Sarnpasamit canals. In addition, the Government will improve co-ordination of water transport with road and rail transport;

(b) The government will provide sufficient equipment for the maintenance of waterways. The private sector will participate in the investment and dredging of waterways in order to accelerate such activities;

(c) The private sector will be encouraged to use a new type of flat-bottom barge that can take up more than 300 tons of cargo with the draft limited to 1.5 m. The volume of cargo can be increased to about 700 tons in the rainy season as the barge has about 2.7 m draft.

136. The secretariat is convinced that much more is going on in the countries of the region concerning the development of inland waterway systems and transport which has not been mentioned in this document due to the shortage of information received. It would help the secretariat to up-date its review and make it more comprehensive before final publication if the delegates attending the current session would be kind enough to provide information on the latest developments in their respective countries.

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